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COMMUNIST CHINA

NAVAL FORCES

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TABLE OF CONTENTS

	Page
A. General	1
B. Organization	2
1. Naval high command	2
2. Naval districts and bases	3
3. Naval communications network	5
4. Forces afloat	5
5. Other naval organizations	6
C. Strength and disposition	7
1. Ships	7
2. Personnel	10
D. Policy and doctrine	10
1. Naval strategic concepts	10
2. Doctrine	11
3. Naval budget and appropriations	11
4. Construction and development programs	11
5. Naval relationships with other countries	13
6. National attitude toward the navy	15
E. Personnel	15
1. Corps and services	15
2. Ranks and rates	16
3. Procurement	16
4. Conditions of service	17
5. Naval uniforms and insignia	18
F. Reserve and mobilization systems	19
1. Ships	19
2. Personnel	19
3. Merchant marine and other auxiliary forces	19
4. Adequacy of mobilization system	21
G. Training	21
1. General	21
2. Facilities	22
3. Officer	22
4. Enlisted	23
5. Shipboard	24
6. Fleet and force	24
7. Reserve	24
H. Logistics	24
1. Procurement	24
2. New construction, repair, and maintenance	25
3. Centers of supply	25
I. Ship design and characteristics	25

Secret

Authority NND 963333
By JW NARA Date 9/2/10

Page

J. Materiel 29

1. Surface ordnance 29
2. Underwater ordnance 29
3. Naval guided missiles 29
4. Electronics 29

K. Personalities 30

1. Biographical sketches 30
2. Ranking officers 31

L. Comments on principal sources 33

FIGURES

Page

Fig. 1 Naval high command (*chart*) 2
Fig. 2 Fleet areas and naval activities (*map*) 4
Fig. 3 Fleet organization (*chart*) 5
Fig. 4 Ship strength and disposition (*table*) 8
Fig. 5 Shipbuilding programs (*table*) 12
Fig. 6 Uniform and insignia (*sketch*) 18
Fig. 7 Ship characteristics (*table*) 26
Fig. 8 "G"class submarine (*photos*) ..... *follows* 33
Fig. 9A "Ta-chih" class submarine tender (*photo*) ..... do
Fig. 9B "W" class submarine (*photo*) ..... do
Fig. 9C "M-V" coastal submarine (*photo*) ..... do
Fig. 9D "Gordyy" class destroyer (*photo*) ..... do
Fig. 10A "Riga" class destroyer escort (*photo*) ..... do
Fig. 10B "Kaibokan II" class patrol escort (*photo*) ..... do
Fig. 10C "Ukuru" class patrol escort (*photo*) ..... do
Fig. 10D "Etorofu" class patrol escort (*photo*) ..... do
Fig. 11A "Hashidate" class old patrol escort (*photo*) ..... do
Fig. 11B "Flower" class old patrol escort (*photo*) ..... do
Fig. 11C "Bathurst" class old patrol escort (*photo*) ..... do
Fig. 11D Ex-GRC old patrol escort (*photo*) ..... do
Fig. 12A "Kronshtadt" class submarine chaser (*photo*) ..... do
Fig. 12B "Shanghai" class fast patrol boat (*photo*) ..... do
Fig. 12C "Swatow" class motor gunboat (*photo*) ..... do
Fig. 12D "Whampoa" class motor gunboat and "Woosung" class small minesweeper (*photo*) ..... do
Fig. 13A "T-43" class minesweeper (*photo*) ..... do
Fig. 13B Ex-U.S. LST (*photo*) ..... do
Fig. 13C Ex-U.S. LSM (*photo*) ..... do
Fig. 13D Light cargo ship (*photo*) ..... do

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Naval Forces

A. General

The Chinese Communist Navy (CCN), since its formation in 1949, has become the largest and the fastest growing naval force in the Far East and includes the fourth largest submarine force in the world. Present ship strength includes 33 submarines, 4 destroyers, 4 destroyer escorts, and about 317 patrol craft. Personnel strength is estimated at 76,500, including 14,500 in the naval air arm. The navy is primarily a coastal defense force but has a limited capability for offensive operations utilizing its submarines and motor torpedo boats.

Until 1960, virtually all aspects of CCN development encompassed excessive heavy reliance on the U.S.S.R. When the Communist forces drove the Nationalists from the mainland in 1949, they fell heir to a heterogeneous collection of ships of multinational origin. At first these ships were virtually useless because of their poor material condition and a lack of qualified operating personnel. To correct this situation, Communist China undertook energetic and extensive naval training and development programs during the years 1950 through 1953. The key role in this effort was played by Soviet naval personnel, who not only supervised the establishment and development of navy schools, but also staffed and, in some instances, headed the new schools. During this same period, the operational readiness of the former Nationalist ships was improved substantially through the installation of Soviet armament, electronics, and probably engineering components.

In 1954 and 1955, a large number of Soviet warships, including 4 destroyers, 8 submarines, 6 submarine chasers, and 2 fleet minesweepers, were transferred to the CCN. Starting in 1955 the Chinese Communist Navy entered a new phase of development. Through extensive technical and materiel assistance from the U.S.S.R., a substantial shipbuilding program was undertaken which involved the construction of several ships of recent Soviet design. The output of these programs totaled over 130 of the most important ships in the CCN.

The vulnerability of this excessive reliance upon the U.S.S.R. became apparent in August 1960, when the Soviet advisers were suddenly withdrawn. The impact on the navy of this withdrawal was quite serious for at least 2 years, and caused postponement or cancellation of naval construction programs that the Chinese Communists had in the planning state. Chinese technicians did, however, continue the outfitting of 4 "W" class submarines whose hulls had been laid down prior to Soviet withdrawal. This effort was completed by 1962.

Economic difficulties also limited the ability of Communist China to support a modern navy. Expansion and/or construction of shipyards and naval facilities, for example, was slowed considerably in 1960 to allow available funds to be used elsewhere.

By mid-1962, the CCN and the shipbuilding industry had apparently adjusted to the withdrawal of Soviet technical and materiel assistance. They had recommenced their naval construction programs as well as the expansion or construction of civilian and navy facilities. Many of the indicators of these programs and policies were unrecognizable at that time, and only the recent identification of new naval units and new or expanded shipyards and naval facilities have proved these facts.

The CCN has the assigned missions of coastal defense, maritime security, and protection of merchant shipping. It could not now turn back a determined attack by a modern Western navy. However, it probably could inflict significant damage upon attacking enemy surface forces by utilizing its submarines, motor torpedo boats, and naval aircraft. In the event of such enemy attack, the CCN could also be expected to mine the normal coastal sealanes and approaches to principal ports and river mouths. The Chinese Communists have an extensive mine-laying capability utilizing almost any type of ship or craft, including junks.

The navy is in a stronger position with respect to the missions of maritime security and protection of merchant shipping, as a ship patrol net covers the entire coastline. Augmenting these offshore patrols is a coastal surveillance system, consisting of a series of communications and observation posts along the coast and radio-equipped reporting agents in the fishing fleets.

The present troop-lift capacity of the navy, employing only the conventional landing ships currently under direct naval control, is two infantry divisions (28,000 men) with organic armor (100 tanks) and artillery (108 artillery pieces and 36 assault guns) and 30 days of supplies. By employing similar amphibious ships now engaged in cargo carrying, conventional merchant vessels, and the thousands of junks and other small craft, the troop-lift capability would be greatly increased. Although the navy has demonstrated an ability to plan and conduct amphibious operations on a small scale, it probably would be hard pressed to mount a large-scale invasion if there were appreciable naval or aerial opposition. Control of the sea and air around Taiwan (T'ai-wan) would be essential to a successful amphibious assault of that island. Although the navy undoubtedly would bring in

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f its major surface ships to support an assault, ncipal attacking forces against opposing naval h probably would be aircraft, submarines, and orpedo boats.

apparent that Communist China is embarked on ns and policies that will eventually lead to her ng a major naval and maritime power. These ac- have taken the form of ambitious shipbuilding dernization programs with primary emphasis on struction of submarines.

rganization

val high command

STRUCTURE — As is the case with the entire mili- nmand structure in Communist China, the organi- f the Chinese Communist Navy (CCN) clearly the former influence of the Soviet Union. The of National Defense controls the People's Lib- Army (PLA), a term encompassing all of the forces. Administrative and operational control armed forces is delegated by the Minister of l Defense to the heads of the individual arms vices. Orders to the CCN are passed from the of National Defense to the Commander in Chief Navy through the General Staff for information dination.

Commander in Chief of the Navy, in addition head of naval forces, currently is a Vice Min- National Defense and the senior navy member National Defense Council. He shares his re- lities with the Political Commissar of the Navy f equal authority. Assisting them in directing l establishment are four deputy commanders: Deputy Commander, who is responsible for the ablishment; the Deputy Commander for Forces he Deputy Commander for Foreign Naval Rela- nd the Deputy Commander for Naval Air. irection of the existing facilities and forces is entralized in the hands of the Chiefs of the taff, Navy Political Department, Navy Rear Department, and Navy Cadre Department 1).

UNCTIONS — The Commander in Chief of the s a threefold function. As senior navy member ational Defense Council he participates in the ion of national military policy. As Vice Min- ational Defense he assists in the implementation olicy and has a voice in determining operational d strategy for all of the armed forces. These together probably consume the greater part forts and largely require that he delegate his ponsibility—direction of the naval service—to dinates. Nevertheless, in theory, the chain of l runs directly from the Commander in Chief of to the operational units.

olitical Commissar of the Navy, while sharing ilities with the Commander in Chief, recognizes ral preeminence of the commander in strictly

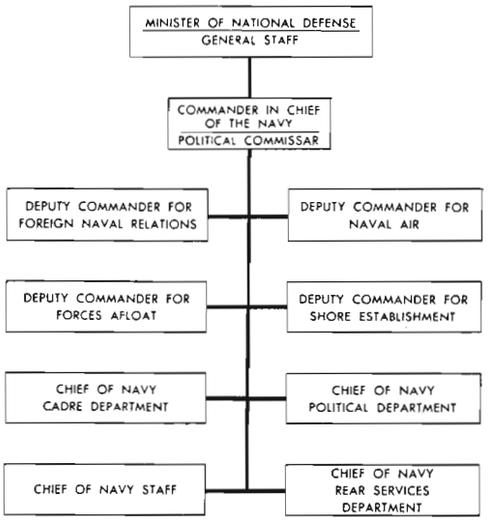
MINISTER OF NATIONAL DEFENSE
GENERAL STAFF
COMMANDER IN CHIEF OF THE NAVY
POLITICAL COMMISSAR
DEPUTY COMMANDER FOR FOREIGN NAVAL RELATIONS
DEPUTY COMMANDER FOR NAVAL AIR
DEPUTY COMMANDER FOR FORCES AFLOAT
DEPUTY COMMANDER FOR SHORE ESTABLISHMENT
CHIEF OF NAVY CADRE DEPARTMENT
CHIEF OF NAVY POLITICAL DEPARTMENT
CHIEF OF NAVY STAFF
CHIEF OF NAVY REAR SERVICES DEPARTMENT

FIGURE 1. CHINESE COMMUNIST NAVAL HIGH COMMAND

military affairs. The Political Commissar is preeminent in political affairs, certain aspects of personnel management, psychological warfare, and counterintelligence. The military staff elements are responsible to the Commander in Chief; the political staff reports directly to the Political Commissar.

Aside from the Commander in Chief of the Navy, the First Deputy Commander has the broadest functions. He serves as executive officer and acts as alternate for the Commander in Chief on frequent occasions. In addition, he is responsible for development of the naval shore establishment, which includes the construction of facilities and installations and the creation and development of shore-based organizations. He is also responsible for supervising existing shore facilities and for controlling the training program. The First Deputy Commander is also a member of the National Defense Council.

The Deputy Commander for Forces Afloat is the second ranking deputy in the chain of command and is responsible for the development of the fleet. A clear distinction must be drawn between this position and that of the Chief of Navy Staff, who is responsible for supervising existing fleet units and operational commands. The Deputy Commander for Forces Afloat, in contrast, is responsible for expanding those existing forces and for determining and improving their capabilities. He probably is also responsible for the adequacy of the base facilities which support the afloat units, a function which might somewhat overlap the duties of the First Deputy Commander.

The most obscure of the deputy commander billets is that of the third deputy. Although his specific title is not known, his descriptive title would be Deputy Commander for Foreign Naval Relations. He seems to be concerned almost exclusively with receiving, entertaining, and otherwise associating with foreign naval delega-

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tions. This function extends to all such delegations but seems to be particularly related to Communist representatives. In the early stages of development of the CCN, the most important aspects of the duties of this deputy commander were the procurement, distribution, and employment of Soviet naval materiel.

A fourth deputy, and the one most recently added to the naval organization, is the Deputy Commander for Naval Air (also called Commander Naval Air Force). He is charged with supervising the development of the naval air force. As is the case with the other deputies, he does not directly control the operational units. However, as Commander Naval Air Force he no doubt issues orders in the name of the Commander in Chief.

The operational core of the navy is the Navy Staff. Naval planning and strategic concepts are determined at higher levels, but the implementation of such decisions is the responsibility of this staff. Although little is known of the internal organization of the Navy Staff, it can be assumed to include individual sections for administrative supervision and coordination, rather than actual operational control. The operational readiness of the forces afloat is the responsibility of the Operations Section, under the Deputy Chief of Navy Staff for Operations. A Coast Defense Section supervises and coordinates matters concerning naval coastal artillery, naval antiaircraft artillery, communications and observation posts, and navy guard units. The Technical Section is assigned responsibility for planning the maintenance and repair of ships and equipment and it also prepares the requirements for the construction or manufacture of ships and equipment.

Although not all functions of the Navy Cadre Department are known, it is believed to be responsible for issuing orders to and maintaining records on officers, enlisted personnel, and civilian employees. It probably is also concerned with naval recruitment, but primary responsibility for recruiting rests with the Navy Political Department.

The Navy Political Department supervises day-to-day political matters within the navy, and the Chief of the Navy Political Department is the most influential person below the deputy commander level. This department, with its covert agents at every level of the naval structure and its political commissars openly assigned to all but the smallest units, exists to ensure the loyalty of all personnel to the Communist regime and to assist in morale and welfare activities. Its area of responsibility includes counterintelligence, political indoctrination, Communist Party and Communist youth group activities in the navy, cultural and recreational matters, recruiting, and relocating discharged personnel. Individual sections probably exist for each activity.

The Rear Services Department is responsible for overall logistic support within the navy. It is broken down into a number of individual functional sections, including those for supply, transport, construction, medical, and finance. The Rear Services Department supervises a broad network of smaller support organizations which serve the naval forces at all levels.

2. Naval districts and bases

In following the organizational structure of the Soviet Navy, the Chinese Communist Navy, for operational, support, and administrative purposes, is divided into three fleet commands: North Sea Fleet, East Sea Fleet and South Sea Fleet (FIGURES 2 and 3). Naval districts no longer exist in Communist China, although in the early stages of development of the CCN the coastline was divided into four such areas.

The boundary of the North Sea Fleet (formerly called the Yellow Sea Fleet) extends from the Chinese-North Korean border (Yalu River) to the Huai Ho (river). The two main naval bases within this area are at Tsingtao (Ch'ing-tao), the fleet headquarters, and Port Arthur (Lü-shun). Naval stations are located at Dairen (Ta-lien), Hu-lu-tao, T'ang-ku, Chefoo (Yen-t'ai), Wei-hai-wei, Ling-shan-wei, and Lien-yün. (A naval base is classified according to the extent of its facilities and the amount of activity; naval ports which do not meet the standards of a naval base are classified as naval stations.) Tsingtao and Port Arthur are also significant as training centers and sites for naval ship repairs; no naval construction has taken place at either location. Dairen is additionally important as the site of the First Naval School (Naval Academy) and of the Lü-ta Shipyard, where one "G" class ballistic missile submarine was launched in August-September 1964 and where "Shanghai" class fast patrol boats (PTF) are presently being constructed.

Since the Gulf of Chihli (Po Hai) is the gateway to the national capital and the industrial heart of Communist China, a separate command, called the Pohai Strait Naval Command, exists at its entrance to guard against intrusion by foreign ships and planes. The Pohai Strait Naval Command consists primarily of coast defense installations located on the islands between Port Arthur and Chefoo, but ships of the North Sea Fleet appear to operate with this command on occasion. Subordination is not clear, but it probably comes under the Commander in Chief, North Sea Fleet during peacetime. During wartime, it probably would report directly to Naval Headquarters, Peking. It is also believed to be closely connected with the Air Defense Command in Communist China.

More publicity has been given to the East Sea Fleet than to any other command, partly as a result of the Soviet Navy visit in 1956, and partly because more commercial ships call at Shanghai, its headquarters, than any other Chinese Communist port. The boundary of the East Sea Fleet extends from the Huai Ho (river) in the north to the boundary of the Fukien and Kwangtung provinces in the south; it includes the Formosa Strait (T'ai-wan Hai-hsia) area. The two main naval bases within this area are Wu-sung and Ting-hai. Naval stations are located at Shanghai, Ta-hsieh Tao, Kuan-chuang Tsun, Yin-hsien (Ningpo), Ch'ang-kuo, Wen-

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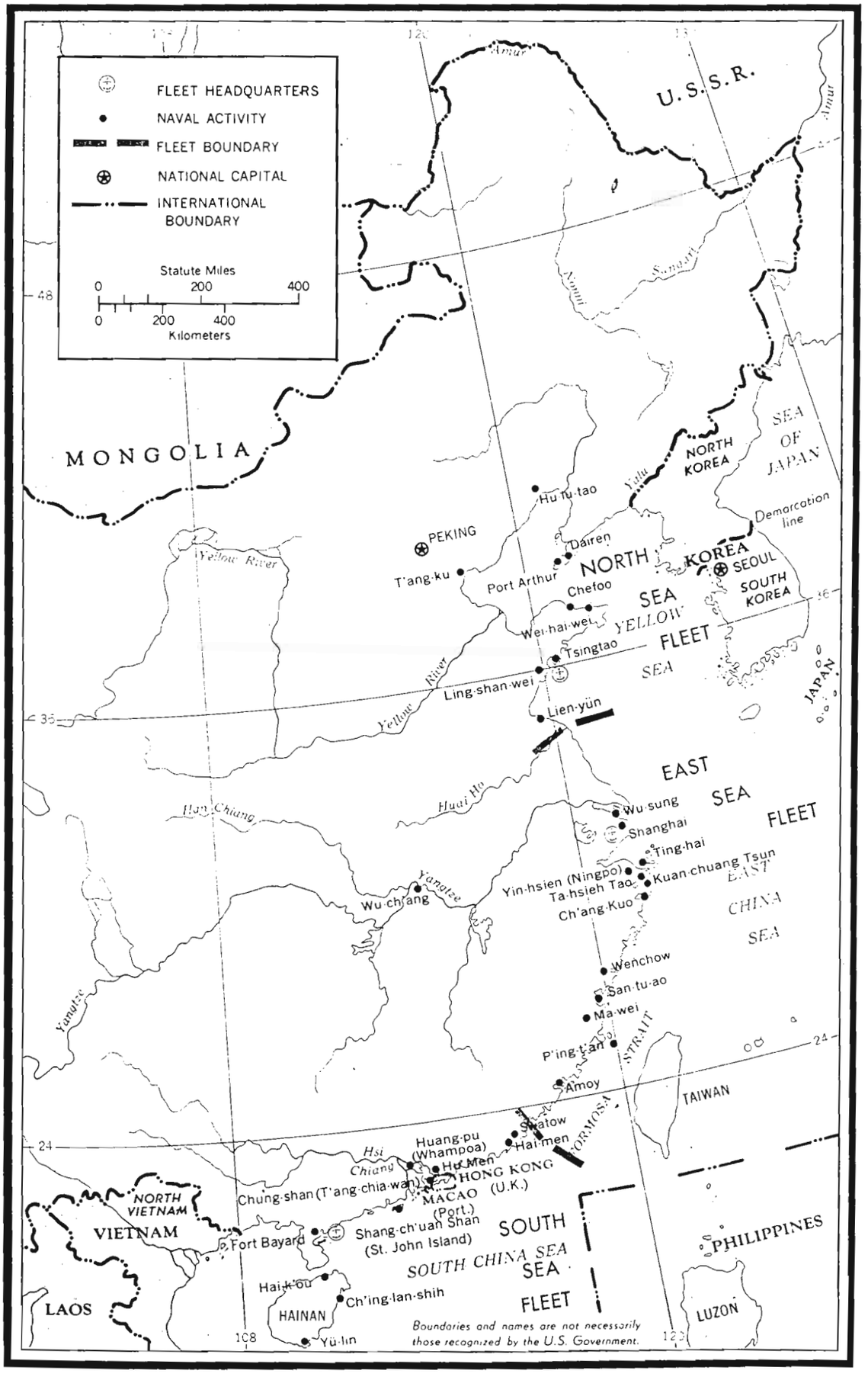

FIGURE 2. CHINESE COMMUNIST FLEET AREAS AND NAVAL ACTIVITIES

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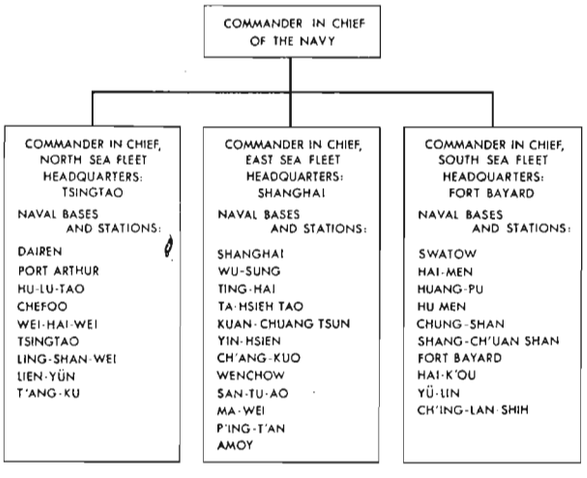

FIGURE 3. CHINESE COMMUNIST NAVY FLEET ORGANIZATION

chow (Yung-chia), San-tu-ao, Ma-wei, P'ing-t'an, and Amoy (Hsia-men).

Despite the fact that naval facilities in the South Sea Fleet area are not as extensive as those of the two northern fleets, from the strategic standpoint the South Sea Fleet area is of major importance because of its proximity to southeast Asia. Covering the territory from the Fukien-Kwangtung provincial border line to the North Vietnam border, this fleet has its headquarters at Fort Bayard (Chang-chiang). The major naval bases in the South Sea Fleet area are Huang-pu (Whampoa) and Swatow (Shan-t'ou). Naval stations are located at Hai-men, Hu Men, Chung-shan, Shang-ch'uan Shan, Hai-k'ou, Ch'ing-lan-shih, and Yü-lin. Because of its strategic location with respect to southeast Asia, Yü-lin is an important naval base.

3. Naval communications network

In the early years of its development, the Chinese Communist Navy had few modern communications facilities. Afloat units were limited to the simplest of ship-to-shore equipment and shore activities often had difficulty communicating with other commands. These defects have largely been corrected in two ways. Afloat, new electronics equipment, primarily Soviet in origin, has been installed in all major units. Ashore, the establishment of a series of communications and observation posts has greatly alleviated the relay problem previously existing.

The communications facilities of the more important ships permit the sending of messages to naval bases or relay stations a considerable distance away. High-frequency radio equipment allows ships to communicate among themselves while steaming in formation or during fleet exercises. Smaller ships are still restricted to short-range, ship-to-shore communications.

Each fleet headquarters has sufficient capability to send messages to subordinate commands. Relay stations exist to send traffic from the distant commands to Peking. Communications between fleet commanders run directly from headquarters to headquarters rather than via Peking.

Existing facilities are considered adequate for wartime and peacetime naval needs.

4. Forces afloat

The operating forces of the Chinese Communist Navy are divided into three fleet commands of unequal size—North Sea Fleet, East Sea Fleet, and South Sea Fleet. Theoretically, at least, the commander in chief of each fleet is directly responsible to the Commander in Chief of the Navy for operational control of his ships. Assisting him are the deputies for naval air and training. Political policy is determined by the Political Commissar and implemented by the Political Department. Depending on the composition of the fleet, there are several force commanders: Commander Major Surface Force, Commander Submarine Force, Commander Motor Torpedo Boat Force, Commander Amphibious Force, and Commander Auxiliary Force. Individual fleet organization varies with the composition of the forces assigned. In the South Sea Fleet, for example, the lack of submarines eliminates the necessity for a Commander Submarine Force.

Operationally, the most important command is the North Sea Fleet which controls most of the major combatant ships of the Chinese Communist Navy. The four destroyers of this fleet constitute one squadron; the submarines probably are divided into squadrons of four or eight ships each. This organization is primarily administrative, however, as both destroyers and submarines operate individually most of the time. As is the case in all fleet areas, smaller patrol craft are organized into squadrons and assigned to the various naval base commanders. These squadrons are referred to as the offshore defense force.

The organization of the East Sea Fleet is believed to follow that of the North Sea Fleet. No major ships of the East Sea Fleet operate in the Formosa Strait. Because of the limited number of major combatant ships that are available, it is not surprising that the Communists do not risk unnecessary encounters with the Nationalists. For some time the CCN has based an adequate force of amphibious and patrol craft in the Formosa Strait area to patrol and protect Chinese Communist territorial waters.

The organization of the South Sea Fleet varies from the two northern fleets only in that it has no submarine force.

Prior to 1 October 1961, each fleet had a unique pendant numbering (hull numbering) system. In the North Sea Fleet, ships were assigned pendant numbers according to type. For example, destroyers were numbered in the 300 series and submarines were numbered in the 400 series. The East Sea Fleet ships, with few exceptions, did not carry pendant numbers. All South Sea Fleet ships except motor torpedo boats carried a prefix "3-" before their three-digit numbers.

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By JW NARA Date 9/2/10

:tober 1961, the Chinese Communist Navy ıvy-wide system of pendant numbering. All are now numbered in the 100 series; the ce ships, destroyer escorts and patrol escorts ·ed in the 200 series; amphibious craft and ·rs are in the 300 series; and the various l craft utilize numbers in the higher series.

naval organizations

ERAL — The missions assigned to Communist generally shared by a number of naval and organizations. In Communist China the ıt have primary responsibility for carrying val missions; however, the naval air force, al artillery, naval antiaircraft artillery, com- ; and observation posts, navy guard units, aritime border defense force all play a sig- : in maintaining the coastal security of Com- ıa.

'AL AIR FORCE — The nucleus of the Chinese Naval Air Force (CCNAF) was formed in ·ith the establishment of a naval air training singtao. Staffed by both Soviet advisers and mmunist Air Force personnel, the school was gaged in training naval aviators preparatory :al creation of a naval aviation structure. In 53, naval aviation was established as an in- ıent of the Chinese Communist Navy.

ne of its creation, the CCNAF was composed ıter division and one light bomber division, out 80 piston aircraft. During the next 4 ·ength underwent a gradual increase as light ; and transport planes were added. By 1957 ;ion to jet aircraft was well underway; total ıtory had climbed to over 300 and personnel ıs estimated to be 8,000. The CCNAF grew y during the years of the "Great Leap For- 58 to 1960), when it reached its present f approximately 500 aircraft and 14,500

;ion of the CCNAF is twofold: in conjunc- he forces afloat it is charged with protecting ·rritorial waters from intrusion by foreign in conjunction with the Chinese Communist e Command, it is charged with air defense ıa mainland.

headquarters are at Peking. Its head, Com- :val Air Force, also holds the title of Deputy ·r for Naval Air which clearly indicates that F is subordinate to the Commander in Chief vy. The internal organization of the naval ıarters is not clear but is presumed to have r political affairs, operational planning, and In theory, operational control of the naval air from the Commander in Chief of the Navy ıe three fleet commanders to the naval air In actual practice, however, Commander Force probably issues orders in the name of ander in Chief of the Navy.

On the operational level, the CCNAF consists of seven air divisions. Each division consists of two or three regiments. Currently these are nine jet fighter regiments; six jet light bomber regiments; a piston-engined light bomber regiment; and small transport, reconnaissance, and training units.

Two naval aviation schools are known to exist. The First Naval Air School is located in the vicinity of Hu-lu-tao and is believed to give basic training in all types of aircraft utilized by the CCNAF. The Second Naval Air School is located near Tsingtao and is reported to give, among other subjects, training in aviation engineering. Little else is known about either school.

Operational training and procedures undoubtedly follow the Soviet pattern. Fighter and bomber units have maintained a fairly high rate of activity, although details of the training program are not known. Training in joint air-sea operations was reported as early as 1952; exercises include communications between ship and aircraft, coordinated attacks against surface targets and submarines, torpedo bombing, and night flying.

Airfields used by the CCNAF are located at Chang-ch'iao, Chiao-hsien, Hai-k'ou, Hsin-ch'eng, Lai-yang, Ling-shui, Liu-t'ing, Lu-ch'iao, Ta-ch'ang, Tsingtao, T'u-ch'eng-tzu, and Yen-tai South. Seaplanes use facilities at Tsingtao and Port Arthur.

c. COASTAL ARTILLERY — Naval coastal artillery units manning both mobile and fixed guns of various calibers exist at most port areas and on many of the offshore islands. Administratively, naval coastal artillery installations are subordinate to the naval base commander in whose area they are located. However, as army personnel man a number of guns in the same areas, a certain amount of interservice coordination is required. This probably is done through the military region commander. Such an organization is believed to exist in the Amoy area where navy coastal artillery batteries participate in the shelling of Chin-men.

d. ANTIAIRCRAFT ARTILLERY — Naval antiaircraft artillery units are located at most naval facilities. Their primary function is to protect naval bases and airfields from attack by air. Close liaison is maintained between the units and the communications and observation posts, with the latter supplying information concerning incoming planes. Apparently the Chinese Communists place great reliance on this type of defense, and units are often seen conducting both day and night gunnery exercises. As in the case of coastal artillery units, a great deal of interservice cooperation is required. It is believed that the antiaircraft artillery positions work closely with the Air Defense Command.

e. COMMUNICATIONS AND OBSERVATION POSTS — A network of communications and observation posts (COP) manned by naval personnel plays a most important role in the surveillance of the coastal waters of Communist China. Each naval base and station has within its zone of responsibility a varying number of COP which are assigned responsibility for surveillance

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of limited, but overlapping, areas. COP are, in general, located on offshore islands where the best opportunity exists for observation of both Chinese Communist and foreign naval and merchant ship movements. The posts also have the mission of reporting movements of unidentified aircraft.

When the posts were first established, shortly after the founding of the CCN, coastal surveillance was conducted only through visual means. However, most COP are now equipped with surface-search and early warning radar. High-powered searchlights are used for nighttime surveillance. It is not known whether infrared and hydroacoustic equipment is in use at the posts, but it is suspected that Communist China inherited some hydroacoustic equipment when the Kwantung Peninsula (Kuan-tung Pan-tao) was acquired from the U.S.S.R. It is probable that at least some of the other communications and observation posts in key locations are so equipped.

f. NAVY GUARD UNITS — Although there are no Western-type naval infantry or marine corps organizations in Communist China, there are elements that have the primary mission of guarding naval bases, airfields, and coastal defense installations. These elements, referred to as navy guard units, also receive some amphibious training; however, to date no units are believed to have participated in any major amphibious exercises.

The fact that navy guard personnel do not wear distinct uniforms or insignia makes them indistinguishable from general service personnel. Each unit, sometimes referred to as a battalion, is subordinate to the base, airfield, or coast defense commander to whom assigned rather than to a commander at fleet or naval headquarters.

The guard battalion attached to the First Naval Air Division, believed to be a typical unit, is composed of a headquarters staff of 10 men, two guard companies of 115 men each, a bodyguard platoon of 20 men, a motor transport platoon of 50 men, and a fire brigade of 10 men. This 320-man battalion is commanded by a senior captain. Individual units vary in size according to the installation to which assigned.

g. MARITIME BORDER DEFENSE FORCE — An organization, referred to here for identification purposes as the maritime border defense force, has evolved out of the former water-borne segment of the Public Security Forces in Communist China. This organization apparently has responsibilities similar to those traditionally assigned to a coast guard; it has responsibility for the security of internal waterways and some responsibility for ensuring that illegal goods do not pass in or out of China aboard foreign merchant ships. The maritime border defense force also has some responsibility to prevent intelligence collection by persons aboard foreign merchant ships calling at Chinese Communist ports.

The maritime border defense force is most easily recognized in the south China area, where the heterogeneous collection of motor gunboats and motor launches used by the organization is marked with pendant numbers with a prefix "G" followed by three digits in the 100 series. For example, a "Swatow" class motor gunboat operated by the maritime border defense force in south China is numbered G101. Personnel aboard these craft have been identified wearing both CCN and border defense force uniforms.

C. Strength and disposition

1. Ships

Communist China possesses the largest naval force in the Far East and the fourth largest submarine force in the world. The size of this naval force is all the more impressive because of its significant growth since 1949, when the navy was formed. The navy's sudden creation and rapid expansion has precluded an orderly evolution, and present fleet strength consists of a heterogeneous collection of ships whose wide diversity of design, age, and national origin points out the uneven, hurried nature of its development. There is evidence to indicate that the Chinese Communists are modernizing many of these units. In addition, they have commenced shipbuilding programs for the construction of indigenous designed ships. These actions will no doubt stabilize and standardize the ship types in the naval inventory.

Afloat strength is divided into three broad categories based on the chronological order of original acquisition: 1) ships captured or otherwise inherited from the Government of the Republic of China (GRC) as it was forced to abandon mainland China; 2) ships received in direct transfer from the U.S.S.R.; and 3) ships produced in Chinese Communist yards.

Former GRC ships provided a nucleus for the navy when it was founded in 1949 and even today comprise approximately 96,000 tons or about 45% of the standard displacement tonnage of the CCN. Of the former GRC ships on the current active list, most were built during the 1930's and World War II in the United States, the United Kingdom, and Japan. These for the most part are landing ships, minesweepers, and patrol types.

Direct transfers from the U.S.S.R., though constituting less than 17% of the total standard displacement tonnage, comprise an important segment of the major combatant ships of the Chinese Communist Navy. They include all 4 destroyers and 7 of the 32 submarines.

Perhaps most significant in aggregate are the ships originating from domestic Chinese shipyards; this category comprises the remaining 38% of the current total tonnage. These ships include 1 "G" class ballistic missile submarine, 24 "W" and 1 "R" class medium-range submarines, 4 "Riga" class destroyer escorts, 14 "T-43" class minesweepers, and 18 "Kronshtadt" submarine chasers, all of standard Soviet naval designs. In addition, in 1964 the Chinese Communists built a 4,000-ton submarine tender. In the future, it may be expected that the percentage of ships originating from domestic Chinese shipyards will increase significantly as the Chinese build ships of their own design and characteristics.

Authority NND 45333
By JW NARA Date 9/2/10

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he strength and disposition of CCN ships are shown FIGURE 4; all are considered to be in active service. effort has been made to indicate operational status as)s undergo periods of upkeep or overhaul of widely ying durations.

he CCN has several compositional weaknesses. First, limited number of destroyer types (DD and DE) iously limits antisubmarine warfare capabilities. A ond weakness lies in the fact that the bulk of afloat ength, including all amphibious and most auxiliary ces, is between 16 and 31 years old. The CCN is also arly deficient in minesweeper strength. Of the 65 nesweepers listed, 24 are limited in operation to sweep- contact mines in inshore waters. The Chinese Com- unists built 14 "T-43" class minesweepers from 1956 to e present, and it is believed that this program has commenced in at least one shipyard. In addition, they are building a new class small minesweeper and a new class trawler/minesweeper. Some of these have already entered the fleet and others probably will be introduced as soon as possible to help bridge the CCN's mine-sweeper deficiency.

Although the CCN has no ships specifically designed as minelayers, it has an especially strong mining capability. All of the Soviet-design ships, including the submarines, are equipped for minelaying. In addition, the Chinese have installed mine tracks in a number of other types, including most patrol escorts and medium landing ships. The remainder of the extensive minelaying capability is provided by naval service craft and the large number of civilian junks which can be readily adapted for simple inshore minelaying operations.

As shown in FIGURE 4, an uneven distribution of ships and naval capabilities exists among the three fleets. On

FIGURE 4. NAVY SHIP STRENGTH AND DISPOSITION

TYPE AND CLASS	ACQUISITION: YEAR/ORIGIN	NUMBER OF SHIPS	FLEET DISPOSITION		
			North	East	South
PRINCIPAL COMBATANTS					
ld Destroyer (ODD):					
Soviet Gordyy	1954–55/U.S.S.R.	4	4	...	...
)estroyer Escort (DE):					
Soviet "Riga"	1956–58/Chinese yard	4	...	4	...
allistic Missile Submarine (SSB):					
Soviet "G"	1964/Chinese yard	1	1	...	...
ubmarine (SS)		32	21	11	...
Soviet "R"	1963/Chinese yard	1	1	...	...
Soviet "W"	1955–63/Chinese yard	24	18	6	...
Soviet "S–1"	1954–55/U.S.S.R.	4	2	2	...
Soviet "M–V"	*do*	3	...	3	...
PATROL					
Patrol Escort (PF)		12	3	7	2
Japanese "Kaibokan II"	1949/GRC	4	...	4	...
Japanese "Kaibokan I"	*do*	1	...	...	1
Japanese "Etorofu"	*do*	1	1	...	...
Japanese UKURU	*do*	1	...	1	...
British "Castle"	*do*	2	...	2	...
Unidentified class	*na*	3	2	...	1
Old Patrol Escort (OPF)		5	...	5	...
British Bathurst	1949/GRC	1	...	1	...
Japanese Hashidate	*do*	1	...	1	...
British "Flower"	*do*	2	...	2	...
GRC single ship	*do*	1	...	1	...
Submarine Chaser (PC):					
Soviet "Kronshtadt"	6: 1955/U.S.S.R 18: 1956–57/Chinese yards.	24	8	10	6
Large Guided Missile Patrol Boat (PTFG):					
Soviet "Osa"	1964/Chinese yard	1	1	...	...
Fast Patrol Boat (PTF):					
"Shanghai"	1959–65/Chinese yard	31	12	12	7
Small Guided Missile Patrol Boat (PTG):					
Soviet "Komar"	1964/Chinese yard	1	1	...	...
Motor Torpedo Boat (PT)		178	63	70	45
Soviet "P–6"	1956–65/Chinese yard	99	33	48	18
Soviet "P–4"	1953/U.S.S.R.	79	30	22	27
Motor Gunboat (PGM)		62	17	25	20
"Swatow"	1958/Chinese yard	36	4	20	12
"Whampoa"	1953/Chinese yard	26	13	5	8
Old Motor Gunboat (OPMG)		3	...	...	3
U.S. "173-ft. PC"	1949/GRC	2	...	...	2
		1	...	...	1

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

FIGURE 4 (*Continued*)

TYPE AND CLASS	ACQUISITION: YEAR/ORIGIN	NUMBER OF SHIPS	FLEET DISPOSITION		
			North	East	South
MINE WARFARE					
Minesweeper, Fleet (steel-hulled) (MSF):					
Soviet T–43	2: 1954/U.S.S.R	16	6	6	4
	14: 1956–64/Chinese yards				
Minesweeper, Small (steel-hulled) (MSL)		25	...	25	...
"Whampoa"	1962/Chinese yard	1	...	1	...
Unidentified class	1960–65/Chinese yard	24	...	24	...
Minesweeper, Coastal (Old) (MSC(O)):					
U.S. "136-ft."	1949/GRC	4	...	...	4
Minesweeper, Auxiliary (MSA)		20	9	11	...
Japanese "Auxiliary Minesweeper #1"	1949/GRC	7	2	5	...
Trawler design	1956/Chinese yards	13	7	6	...
AMPHIBIOUS WARFARE					
Tank, Landing Ship (LST):					
U.S. LST I	1949/GRC	20	8	9	3
Medium Landing Ship (LSM):					
U.S. LSM I	*do*	13	1	8	4
Infantry Landing Ship (Large) (LSIL):					
U.S. "LSIL"	*do*	16	3	11	2
Landing Craft, Utility (LCU)		10	...	6	4
U.S. "LCT Mk 5" and "LCT Mk 6"	1949/GRC	8	...	6	2
British "LCT (3)"	*do*	1	...	...	1
British "LCT (4)"	*do*	1	...	...	1
Landing Craft, Mechanized (LCM):					
U.S. "LCM Mk 6"	1953–63/Chinese yards	200	50	100	50
AUXILIARIES					
Miscellaneous Auxiliary (AG)		35	15	5	15
Soviet T–43	1960/U.S.S.R	1	...	1	...
GRC "Hai Customs Cruiser"	1949/GRC	1	...	...	1
Japanese "Auxiliary Minesweeper #1"	*do*	13	...	2	11
British "Isles"	*do*	1	...	1	...
Single ships	Mixed	19	15	1	3
Old Small Radar Picket Ship (AGRL):					
GRC "Yung sui"	1949/GRC	1	1	...	...
Light Cargo Ship (AKL)		10	3	5	2
U.S. "Army FS Design 330"	1949/GRC	8	3	3	2
Japanese "2DRS"	1960/salvaged	1	...	1	...
"Tan lin"	1961/Chinese yard	1	...	1	...
Net Laying Ship (AN)		6	3	3	...
U.S. "Trec"	1949/GRC	5	2	3	...
British Barricade	*do*	1	1	...	...
Oiler (AO)		5	...	4	1
U.S. Mettawee	1949/GRC	4	...	4	...
British Ebanol	*do*	1	...	...	1
Landing Craft Repair Ship (ARL):					
U.S. ARL 1	*do*	1	...	1	...
Small Submarine Tender (ASL):					
"Ta-chih"	1964/Chinese yard	1	...	1	...
Auxiliary Ocean Tug (ATA)		6	1	5	...
Soviet ROSLAVL	1959/Chinese yard	2	1	1	...
U.S. "Army 149-ft."	1949/GRC	2	...	2	...
U.S. "143-ft."	*do*	2	...	2	...
SERVICE CRAFT					
Various types	Mixed	353	98	105	150

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

regate tonnage basis, about 39% is assigned to the Sea Fleet, about 44% to the East Sea Fleet, and o the South Sea Fleet.

North Sea Fleet includes all 4 destroyers, 22 of the marines and 6 of the 16 fleet minesweepers. The derance of afloat strength, including all major normally is based at the two principal naval bases t Arthur and Tsingtao. Other ship types base at nor naval facilities at Hu-lu-tao, Chefoo, Wei-hai- ing-shan-wei, Lien-yün, and T'ang-ku.

East Sea Fleet contains 11 submarines, all 4 ver escorts, 12 of the 17 patrol escorts, 10 of the marine chasers, and the majority of amphibious uxiliary types. All East Sea Fleet ships of sub- chaser size and larger base at Shanghai, Wu- Ting-hai, and Ta-hsieh Tao. Many of the smaller types use the naval installations at Kuan-chang Yin-hsien (Ningpo), Chang-kuo, Wenchow, San- Ma-wei, P'ing-t'an, and Amoy. None of the sub- s or larger ships base in or near the Formosa

The relative proportions of afloat strength held n the North Sea Fleet and the East Sea Fleet are y commensurate with the extent of the coastal in their respective operational areas.

South Sea Fleet is strikingly deficient in afloat h, the largest combatant ships being two patrol . With only 17% of the total CCN tonnage, this responsible for the defense of about a third of the e coastline. All larger ships base at Yü-lin, -pu, Swatow, and Fort Bayard. Some smaller are located at Hai-men, Hu Men, Chung-shou, ch'uan Shou, Hai-k'ou, and Ch'ing-tan. The naval tion with the greatest naval strength near the sa Strait is Swatow.

e are apparently few restricting boundaries for rating forces of the North Sea and East Sea fleets, e ships of these fleets often interdeploy. The im- e of strength between the North, East, and South eets has almost certainly been because of China's to build up the North and East Sea Fleets first, hey are the primary defense of the "heartland." lition, and particularly so in the north, the main to China has been in the North and East Sea reas. It appears that, since the North and East leets have built up to the strengths they now , and since the threat to China has shifted to the the Chinese Communists have begun, and can be ed to continue, to strengthen the South Sea Fleet. qualization of fleets will no doubt take some years; er, if the need so arises, the Chinese could deploy mber of units to the South Sea Fleet to meet the ency or threat situation encountered.

ther factor tending to dictate the uneven distribu- naval strength is the relative availability of naval and repair facilities in the different areas. North and east China have from the beginning been equipped in this regard than south China. How- gradual improvement of facilities in south China offers some adjustment to the problem and could allow the strengthening of naval forces in that area.

Current strength and disposition of the Chinese Communist Navy is available in Defense Intelligence Agency quarterly publication *Strength and Disposition of Foreign Navies* (DIA AP-1-230-1-1).

2. Personnel

The personnel strength of the CCN is approximately 76,500 officers and enlisted men, including an estimated 14,500 assigned to the naval air force. The service-wide ratio of officers to enlisted men in the navy is approximately 1 to 8.

Of the 62,000 general service personnel, about 26,000 are assigned aboard ship. A total of 33,600 personnel serve ashore, including approximately 31,300 assigned to the naval bases, small naval facilities, and coast defense installations in the three fleet areas, and to naval headquarters in Peking. The remaining 2,350 personnel are undergoing officer candidate or basic training prior to being assigned to permanent duty stations. An additional 3% of the personnel assigned to duty stations are undergoing various types of advanced training at specialized schools.

The following tabulation gives the general disposition of CCN general service personnel among the three fleet areas and at Peking:

Command	Afloat	Ashore	Pre-assignment training	Total
North Sea Fleet	9,000	11,150	950	21,100
East Sea Fleet	11,000	13,550	750	25,300
South Sea Fleet	6,000	7,350	650	14,000
Naval Headquarters, Peking	...	1,600	...	1,600
Total	26,000	33,650	2,350	62,000

D. Policy and doctrine

1. Naval strategic concepts

The political, economic, and military circumstances which have prevailed under the Communist regime in China have resulted in the formulation of naval strategic concepts which are primarily defensive. The principal effort, therefore, has been directed toward the creation of a navy capable of: 1) defending the China coast; 2) guarding against unauthorized movements via Chinese waters; and 3) protecting Chinese Communist sealanes of transportation. To these defensive missions has been added the responsibility of maintaining an amphibious assault capability. The amphibious capability probably will exist only so long as it appears that national objectives may have to be accomplished through amphibious operations. The defensive naval missions, on the other hand, serve a long-term military objective and can be expected to be a permanent part of Chinese Communist naval policy.

Communist China was quick to recognize its vulnerability to attack across its long coastal perimeter. Naval development has therefore been oriented toward the

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

establishment of an effective coastal defense force. The buildup of surface strength has placed particular emphasis on inshore patrol and surveillance, defensive mining operations, and motor torpedo boat warfare. The submarine force is believed to form an integral part of the strategically defensive concept and its development was apparently intended to serve a dual function—to gain international naval prestige and, more important, to discourage foreign incursions into Chinese waters. This force could also pose a serious offensive threat to Western naval power in the Far East.

2. Doctrine

The current doctrine of the CCN is largely the result of the combination of the prominent role played by Soviet advisers who guided the development of the navy and an attempt by the CCN to break away from exclusive dependence on Soviet influence. Until 1960, Chinese training manuals were believed to be verbatim translations of Soviet publications, and much of the operational training was conducted under Soviet supervision. Even tactical doctrine, deployment patterns, and general fleet operations reflected the Soviet naval principle of placing defense ahead of offense. For example, surface ships are kept within coastal waters, and so far as can be determined have not proceeded beyond the range of shore-based air cover. Since 1960 there has been an apparent effort to break this dependence on Soviet military manuals, a move probably encouraged by the political breach. However, foreign military techniques are still recognized as valuable and some U.S. doctrine has been disguised as Chinese, and written into Communist training publications.

As in the Soviet Navy, major emphasis is placed on such weapons of attrition as torpedoes and mines, and the Chinese are believed to be stockpiling both. The navy now possesses 178 motor torpedo boats and could quickly add more through a crash construction program. Minelaying presents no problem, despite the fact that the CCN has no ships specifically built as minelayers, as virtually all of the larger ships are fitted with mine tracks and any of the coastal craft could be readily adapted to simple minelaying operations.

The Soviet influence is still evident in the Chinese coastal defense function which has been largely assigned to the navy. This responsibility extends from afloat patrols to navy-manned communications and observation posts, naval coastal artillery emplacements, and a land-based naval air arm.

The Chinese Communist amphibious doctrine is not entirely clear, as assaults to date have been on a very small scale or against lightly defended islands. The only true amphibious operation to date was the assault on Ich'ang in 1955, which was preceded by a period of heavy bombardment from the air and by ship and shore batteries. The assault was a combined air, surface, and ground operation. Although the Chinese Communists landed the equivalent of two regiments (5,000-6,000) in the Ich'ang assault, there is no evidence of any force of division size or larger specifically trained for large-scale amphibious assault operations. There is evidence that training in amphibious tactics continues to be a portion of naval doctrine, but there have been no full-scale amphibious rehearsals to date. It is expected that the naval amphibious lift performance of the CCN will remain a factor of training and not increase significantly in the near future.

3. Naval budget and appropriations

No officially announced data on Communist China's budget have been available since 1960. Current defense expenditures are estimated to be on the order of 7 to 8 billion yuan or about 6% to 7% of gross national product. Valued in U.S. dollars this would amount to somewhat over $3 billion.

The naval share of the military budget must be estimated, since official figures are not released for the individual components of the armed forces. The best current estimate is that the allocation specifically earmarked for naval use accounts for approximately 5% of the total military appropriation. Basically, only expenses covering maintenance of the existing naval establishment must be met by the naval allotment.

The cost of new facilities, ships, and equipment is not included in the naval appropriation. These naval expenditures are covered by other portions of the national budget, especially the allocations for the engineering and construction industries. It is probable that the navy also eventually realizes an additional portion of the overall military budget in areas covered under a joint allocation.

4. Construction and development programs

a. AFLOAT — The principal development effort in the CCN over the period 1949-55 was directed toward rebuilding and modernizing the ships inherited from the Chinese Nationalist or GRC Navy. Owing to the damaged or otherwise poor material condition of the ships thus received, most of them had to be rebuilt or at least equipped with modern Soviet ordnance and electronics systems. A number of ships were modified in design to perform additional tasks. Ports were cut into the sterns of most of the medium landing ships (LSM) and internal minelaying tracks installed; six infantry landing ships, large (LSIL) were configured to sweep moored contact mines and six LSIL had rocket launchers installed. The lack of adequate ship repair facilities and skilled shipbuilding labor greatly hampered the modernization program and necessitated heavy reliance on Soviet assistance. Naval shipbuilding over this same period was limited almost entirely to the production of minor patrol and landing craft.

In 1955 Communist China embarked upon its first significant shipbuilding effort. With extensive Soviet materiel and technical assistance, the Chinese were able to commence serial assembly of five classes of Soviet-designed warships—"W" class submarines (SS), "Riga" class destroyer escorts (DE), "Kronshtadt" class subma-

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

rine chasers (PC), "P-6" class motor torpedo boats (PT), and T-43 class fleet minesweepers (MSF). Rather than being self-sustaining, however, these shipbuilding programs in the main involved the assembly of component sections prefabricated in the U.S.S.R. Initially, the programs were closely supervised by Soviet shipbuilding technicians, with the Chinese providing little more than the labor force. With the gradual strengthening of indigenous Chinese shipbuilding technology, the early Soviet supervisory role was largely reduced to that of technical consultant.

The materiel contributions of China to its shipbuilding effort also increased appreciably. Paralleling national growth in heavy industry, the Chinese developed capabilities for locally producing hull plating, strength members, piping, and electrical wiring, thereby reducing dependence on the U.S.S.R. for supply of these basic shipbuilding items. Communist China has also made significant strides in the manufacture of marine diesel engines. This is reflected by the appearance of three Chinese-designed patrol craft—the "Swatow" and "Whampoa" class motor gunboats (PGM) and the "Shanghai" class fast patrol boat (PTF).

Chinese Communist naval shipbuilding efforts to date are summarized in FIGURE 5. The numbers produced in specific areas are indicated where determinable.

The most significant ship to be produced in Communist China to date is a "G" class ballistic missile submarine. Construction of this ship began in mid-1962 at Lü-Ta Shipyard in Dairen, with the ship being launched in September 1964. It is not known whether this submarine was constructed from the keel up or from components left by the Soviets. No follow-on hull has yet been observed.

The Chinese Communists are also building "R" class submarines. The first hull of this class was built in Kiangnan Shipyard, Shanghai, and launched in August 1963. It is not known how many additional units of this class the Chinese will build.

The most significant ship type to be produced in Communist China prior to 1963 was the "W" class medium-range submarine. Assembly of this class was started about mid-1955 at the Kiangnan Shipyard in Shanghai, with the first hull coming off the ways in 1956. From that time until the 15th hull was launched in 1960, the Chiang-nan Shipyard produced three to four submarines annually. In late 1957, Wu-ch'ang Shipyard, opposite Hankow on the upper Yangtze River, also commenced assembly of the "W" class submarine. Two hulls were produced annually from this yard until the program terminated in 1960, with total production reaching six. While assembly of "W" class submarines proceeded at a reasonably smooth pace in Communist China until 1960, only 17 of the 21 hulls became operational on schedule. The last four were in advanced stages of fitting out when the U.S.S.R. withdrew technical and materiel aid to the program in late 1960. These four submarines remained alongside shipyards in Shanghai until mid-1962, when they were singly transferred to Tsingtao and accepted as operational fleet units. The long delay was attributed to a lack of some essential engineering or electronic components which the U.S.S.R. had been supplying. It is significant that, despite this obstacle, technical problems were apparently overcome and the four submarines completed without foreign assistance. In addition to the "W" class discussed above, it is probable that the Chinese Communists have built an additional 3 or 4 "W" class submarines during the

FIGURE 5. SUMMARY OF NAVAL SHIPBUILDING PROGRAMS

TYPE/CLASS	PRODUCTION DATES	SHIPS	YARD LOCATION	SHIPS
SSB/"G"	1964	1	Dairen	1
SS/"R"	1963	1	Shanghai	1
SS/"W"	1955–present	24	....*do*	16
			Wu-chang	8
DE/"Riga"	1956–58	4	Shanghai	4
PC/"Kronshtadt"	1956–57	18	....*do*	12
			Canton	6
MSF/"T–43"	1956–present	14	Wu-ch'ang	11
			Canton	3
PTFG/"Osa"	1964	1	....*na*	1
PTF/"Komar"	1964	1	....*na*	1
PT/"P–6"	1956–61	99	Yangtze complex	69
			Canton	30
PGM/"Swatow"	1958–60	*73	Shanghai	27
			Canton	42
			Dairen	4
PGM/"Whampoa"	1953–55	26	Shanghai, Canton	26
PTF/"Shanghai"	1959–present	31	Shanghai	12
			Dairen	19
LCM/U.S. "LCM Mk 6"	1953–present	200	Dairen, Canton, and Yin-hsien	200
ASL/"Ta-chih"	1964	1	Shanghai	1
AKL/"Tan lin"	1961	1	....*do*	1

na Data not available.

* Approximately 30 were transferred to North Vietnam; at least 3 more and possibly as many as 7 were transferred to North Korea.

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

1962-64 period. It is possible that this construction will end the "W" class program, and that the Chinese will embark on a new class construction.

Another important Soviet design to be assembled in China is the "Riga" class destroyer escort. Carried out at the Hu-tung Shipyard, Shanghai, this program terminated with the completion of the fourth unit in January 1958.

The "Kronshtadt" class submarine chaser was produced at Kiousin Dockyard, Shanghai; Huang-pu Shipyard near Canton, and possibly another yard in the Shanghai-Yangtze area. During the 2 years of production, 1956-57, 18 ships were built.

Fleet minesweepers were produced in pairs at Wu-ch'ang Shipyard and appeared at irregular intervals from 1956 to 1960. In 1958 construction of this class was started at a south China yard, probably Huang-pu Shipyard, where construction continued until late 1960. Total output from this program has been at least 14 ships. Recent evidence indicates that construction of "T-43" class minesweepers is taking place again at Wu-ch'ang Shipyard.

Various yards throughout Communist China have produced about 100 "P-6" class motor torpedo boats since 1956. While there is no evidence of a continuation of this program, additional hulls are expected to be produced when the need arises to replace the "P-4" class and "P-6" class currently operational. In 1958, some of the yards producing the "P-6" class motor torpedo boat commenced production of the "Swatow" class PGM. Total production of this class reached about 73 units in 1961. Of these, about 30 were subsequently transferred to North Vietnam, and some to North Korea.

The "Shanghai" class fast patrol boat first appeared in 1959. Units of this exclusively Chinese Communist design were produced at the rate of about four per year at the International Dockyard, Shanghai, through 1961. It is believed that 12 units were built at this yard during the period mentioned. Sometime in 1964, the Lü-Ta Shipyard in Dairen began series construction of a "modified Shanghai" class PTF (130′ vice 120′). This unit is equipped with heavier and additional armament as compared to the earlier 120-foot version. The Lü-Ta Shipyard has built at least 19 of these modified Shanghais, and it is estimated that many more of this versatile, high-speed unit will be built in the future.

The "Whampoa" class patrol craft (PGM) and the landing craft, mechanized (LCM) shown in FIGURE 5, have been constructed at a number of yards. The LCM appears to be an exact replica of the standard World War II U.S. "LCM Mk 6" class. Various indigenous designs of motor launches and armed motor junks have also been built in Communist China.

Beginning in mid-1962, Communist China embarked again on an ambitious shipbuilding program. To date, in addition to the continued building of "W" class submarines, it has built a "G" class ballistic missile submarine, at least one and probably more "R" class submarines, and a modern submarine tender. At least one each, and possibly more, of the "Osa" and "Komar" guided missile patrol boats have been constructed, and series construction of the "Shanghai" class fast patrol boats continues. Also, naval auxiliaries, a new unidentified class minesweeper, and other patrol craft and small amphibious boats are being built, and the older ships are being overhauled and modernized. Such activities indicate that the Chinese Communist Navy apparently is receiving a larger percentage of the military budget and is expanding at a rapid rate.

b. ASHORE — The development of the physical plant of the naval shore establishment, although not as spectacular as that of the fleet, paralleled its expansion until 1960. The naval bases at Port Arthur, Tsingtao, Shanghai, and Huang-pu, which date back to Japanese and even pre-World War II Chinese use, were steadily expanded to cope with the increasing size of the navy. Sizable naval facilities were established at Ting-hai, in the Chou-shan Islands, and at Fort Bayard. Smaller facilities were constructed at many locations in Communist China. In addition, numerous naval communications and observation posts and naval coastal artillery installations were constructed along the entire length of the China coast. Such development was curtailed with the Soviet withdrawal in 1960, but significant expansion has been taking place since 1962 and is expected to continue.

5. Naval relationships with other countries

Three political circumstances have dominated the development and the operating patterns of the Chinese Communist Navy: 1) the geographic proximity of hostile forces of the Government of the Republic of China (GRC), with whom a technical state of war continues to exist; 2) heavy dependence until 1960 on the U.S.S.R.; and 3) the effects of withdrawal of Soviet naval assistance.

The hostility between Communist China and the Republic of China has been an important factor in determining Chinese Communist national military planning. The announced Nationalist intention to return to the mainland and the Communist counter declaration of intent to seize Taiwan and the offshore islands have set the stage for their naval relations with one another. Both naval forces have been firmly committed to defensive deployments from which a number of clashes have developed at different times over the past 10 years. Aside from the bombing of the cruiser *Chungking* by GRC aircraft, which actually occurred before that defecting warship had been formally incorporated into the embryonic Chinese Communist Navy, the Communist side has been the victor in most of the encounters to date. Using motor torpedo boats (PT) covertly deployed to the Formosa Strait, the CCN has sunk or seriously damaged a number of GRC naval ships operating in the offshore island areas. During the Shang-ta-ch'en Shan (also known as Tachen Island) operation, in the winter months of 1954-55, PT supporting the

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

Communist invading forces sank the destroyer escort *T'ai-p'ing* and PGM 103 and damaged PGM 101 beyond repair. During the Formosa Strait crisis in August-September 1958, several night PT attacks were made on GRC convoys supplying the offshore islands. In these actions, a merchant marine LST on contract to the GRC was sunk and one navy LST was badly damaged, with the loss of only three to five PT boats. A naval engagement (1 May 1965) off Tung-yin Shan resulted in serious damage to a GRC PC. Another engagement on 6 August 1965 resulted in the loss of two GRC ships, a PC and a PCE, with heavy loss of life. Other encounters have occurred from time to time and can be expected in the future, with action usually initiated by the side holding a strong tactical advantage. Neither side has shown a willingness to commit heavier units to a major engagement, and action seldom involves craft larger than PTF, PT, PGM, and YP.

After gaining control of the mainland China coast in 1949, Communist China quickly recognized the need for a defensive naval force as protection against nearby hostile forces. With practically no native means at their disposal for building up a navy, the Chinese Communists turned for assistance to the Soviets, who responded almost immediately. Beginning in 1949, Soviet aid took many forms—direct transfers of Soviet warships, provision of designs and component sections for modern Soviet ships for assembly in Chinese yards, supply of large amounts of other naval materiel, establishment of numerous naval advisory and training missions at all levels in the embryonic navy, and enrollment of large numbers of Chinese naval officers in staff and technical schools in the U.S.S.R.

Only through the extensive assistance of the Soviet Navy was rapid development of the CCN made possible. Ships transferred from the U.S.S.R. and those assembled in Communist China from Soviet-supplied components currently provide the principal combat potential of the navy. Most naval materiel, especially ordnance, electronics, and propulsion machinery, also originated in the U.S.S.R. Much Soviet technical assistance was directed toward the establishment of programs for local Chinese production of naval equipment.

Equally important assistance in the development of the CCN was furnished by the Soviet Naval Advisory Mission. This mission was instituted to impart Soviet naval experience, methods, and technical skills to the Chinese. Until late 1960 it consisted of the Soviet Advisory Section at Naval Headquarters, Peking, and of a network of representatives attached to every major subordinate command or installation. Initially this network was so extensive as to include every ship and tactical organization in the navy. Upwards of 500 Soviets were assigned to the various naval missions with the CCN during the early stages, with about 100 serving with the Soviet Advisory Section. Gradually, as the CCN developed and gained practical operating experience, the number of Soviet advisers was reduced. At the time of the mass withdrawal of Soviet personnel in late 1960, the number probably did not exceed 150; the advisory section was reduced to about 30 persons with the remaining 120 on duty with the fleet commands, the naval academy at Dairen, and specialized training commands. By the end of 1960 all Soviet naval advisers had returned to the U.S.S.R.

For psychological reasons, the Soviet Naval Advisory Mission was integrated into the CCN organization so as to cloak even the slightest outward appearance of Soviet control or domination. Most of the personnel wore civilian clothing or CCN uniforms without badges or rank insignia. Relations between the Chinese and their Soviet advisers were generally described as "polite" with little evidence of serious ethnic friction on any level. Customarily the local Soviet advisers gave specific advice only when it was requested. They did, however, make periodic reports to the head of the Soviet Advisory Section, who in turn recommended general remedial measures to the CCN high command. The Soviet Naval Advisory Mission not only provided beneficial guidance to the CCN but also enabled the Soviet Navy to evaluate adequately the professional competence of its Far Eastern ally. Regardless of the outcome of the Sino-Soviet dispute, it is not expected that Soviet naval advisers will return to Communist China in significant numbers, as the CCN has achieved a satisfactory degree of proficiency in operating its navy.

During the earlier stages in the development of the CCN, large numbers of Chinese officers were sent to the U.S.S.R. for advanced and specialized naval schooling. Small numbers of senior naval officers were sent annually to the Order of Lenin Naval Academy at Leningrad (formerly the Voroshilov Naval Academy) for command and staff training. A limited number of junior officers and enlisted personnel was enrolled each year for specialized technical training at several other Soviet naval schools in the Leningrad area and in the Vladivostok-Nakhodka naval complex. In 1960, following the political break, the number of officers and naval students was drastically reduced, and specialized naval training in the U.S.S.R. was curtailed. It is believed that there are no Chinese Communist naval students studying in the Soviet Union at the present time.

In addition to technical and materiel assistance in developing the CCN, the U.S.S.R. took several measures which enhanced the prestige of China as a naval power. In 1955, the U.S.S.R. ceded Kuan-tung Pan-tao (Kwantung Peninsula) to China, together with its important naval and industrial complex of Port Arthur-Dairen. Port Arthur has since become one of the two largest bases of the CCN. In the summer of 1956 the Soviet Pacific Fleet made an official visit to Shanghai, the first visit of foreign warships to mainland China since the defeat of the Nationalists. In view of existing relations, it is not expected that the CCN will pay the customary return visit.

Elsewhere in the Communist World, China maintains its closest naval relations with North Korea and North Vietnam, and the navies of both these neighboring coun-

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

tries have received technical and materiel assistance. North Korean naval officers and enlisted men have received training in CCN fleet schools, as well as advanced instruction at the Dairen Naval Academy. Some "Swatow" class motor gunboats have been given to the North Korean Navy. North Vietnam has also received about 30 "Swatow" class motor gunboats which were built in Communist China. The CCN has established a mission in North Vietnam to assist in the development of the navy and has also given training to a number of North Vietnamese naval personnel at schools in south China.

Naval relations with other Communist countries have been more limited. East Germany has provided a number of shipbuilding technicians to China and has given training to Chinese naval construction specialists in German shipyards. High ranking CCN officials have served on numerous Chinese military teams visiting the different Communist countries. One such visit in 1959 included calls at all European Communist countries and Mongolia. After 1960, with the exception of Albania, the European Communist countries have followed the lead of the U.S.S.R. by effectively reducing naval assistance to Communist China. This amounted to the return of some technicians and specialists from China and the withholding of instruction from Chinese naval students in Europe. At the same time, Soviet relations with Albania worsened and caused that country to look to Communist China for support. The Chinese Communists have furnished Albania with technical and materiel support for its navy; however, the extent of this aid is yet to be determined.

Such non-Communist naval relations that Communist China has maintained have been largely with southeast Asian nations. Formal naval visits were made by the Indian fleet flagship, the cruiser *Mysore,* in July 1958 and by the Indonesian sail training ship *Dewa Rutji* in June 1959. Neither of these visits was returned by the CCN, demonstrating the unwillingness of Communist China to send her navy far from coastal waters. As relations between India and Communist China have deteriorated, it is not expected that a return visit to India will be made. Many exchanges of naval delegations and naval friendship declarations have taken place with several of the non-members of the Southeast Asia Treaty Organization (SEATO). Foreign groups visiting China, including parties from Burma, Indonesia, Laos, and Cambodia, have been taken on extensive tours of naval installations and training centers.

6. National attitude toward the navy

A strong nautical tradition has long flourished among the coastal inhabitants of China. Because of the vast distances to be covered and the poor road conditions of the country, great reliance has always been placed upon river and sea travel. The large number of bays, inlets, offshore islands, and navigable rivers have encouraged this orientation toward movement by ship. Thus, since early in modern history the commercial trade along the coastal waters of eastern Asia has been dominated by Chinese junk fleets. Furthermore, a substantial economic dependence of the population on the sea has made fishing the livelihood of a large segment of the coastal people.

Nevertheless, the Chinese involvement in maritime affairs has been limited to coastal areas and small ships. For centuries high seas trade into and out of these same waters was dominated by other nationalities. Similarly, political control of long stretches of the China coast was exercised by other nations. Now, for the first time in the modern era, China has become a significant naval factor in Asian waters, and appears intent on becoming a maritime/naval power.

The fact that Communist China now possesses the largest indigenous Asian naval force could rightly be a source of great national pride. As in most other Communist countries, the public Chinese attitude toward the military services is largely indistinguishable from the official government position as reflected in the press and radio. The regime has chosen to exploit the naval strength of the country from a propaganda viewpoint and has accorded the navy significant attention in the mass communication media. Although the true effectiveness of these methods is difficult to assess, it is believed that the navy has come to enjoy considerable public favor.

E. Personnel

1. Corps and services

Upon commissioning, officers of the Chinese Communist Navy are assigned to one of five corps: line, political, rear services, coast defense, or naval air. Enlisted personnel may be assigned to any of these except the political corps.

Personnel of the line corps are directly concerned with the operation of the forces afloat and serve either in ships or attached to an ashore staff which supervises fleet operations. Line officers of appropriate rank command the ships of the Chinese Communist Navy, and in view of the preponderance of patrol types, there is an excellent opportunity for officers to receive commands at an early stage in their careers. Other line officers serving afloat are assigned to one of three departments: operations, engineering, or gunnery. While no badges are worn by enlisted personnel to indicate specialties, it is known that enlisted personnel specialize as radiomen, signalmen, and gunners, to name but a few. Enlisted personnel normally remain within the specialty for the duration of their naval service. Senior enlisted personnel in certain specialties are given command of some of the patrol craft of the CCN.

Political commissars, the members of the political corps, enjoy a unique position in the Chinese Communist Navy. Although they serve both in ships and in the shore establishment, they are not considered subordinate to the commanding officer of the ship or activity to which assigned and political disputes which arise are decided at a higher echelon. This practice is followed

Authority NND 45-333
By JW NARA Date 9/2/10

from the level of the Deputy Commander for Political Affairs on down. The main function of the political commissar is to implement national political policy which is decided at a higher level, but he is also concerned with training and the morale of the unit to which he is attached. In view of the function of the political corps, only officers are assigned. Political officers are not eligible to succeed to command.

Rear services personnel are involved exclusively with support functions. They are assigned to all major staffs and to naval supply depots; to date, none has been reported serving afloat. The majority of rear services of personnel are supply officers, but small groups of recreation personnel (band and special services), doctors, lawyers, and nurses probably are included.

The coast defense corps, which includes personnel assigned to naval coastal artillery batteries, antiaircraft artillery, communications and observation posts, and navy guard units, is a corps in name only. No one person at naval headquarters is designated as overall head. For planning purposes this corps comes under the Coast Defense Section of the Navy Staff. At the operational level there are units referred to as battalions or regiments, but these are subordinate to a naval base commander rather than to an overall coast defense commander. The only trait which justifies using the term "corps" is the fact that personnel appear to remain in coast defense billets throughout their careers.

The naval air arm consists of the pilots, the ground and air crews, the training personnel, and the headquarters staffs necessary to operate the Chinese Communist Naval Air Force.

2. Ranks and rates

The system of personal military ranks was abolished as of 1 June 1965. The command structure which remains probably resembles the pre-1955 system of the PLA. Officers and enlisted men probably are known by the position held, such as "navigator," "radioman," "engineer," or simply as "comrade." The decision to abolish the 10-year-old system of personal ranks was politically inspired. It was the intention of Communist China's aging leaders to recreate a revolutionary armed force along the lines which proved so successful in the years of combat leading to victory over the Nationalists. It is an attempt to prevent the emergence of a privileged officer class and to assure a close identity among the men of the armed forces and between them and the people.

During the 10 years from February 1955 to 1 June 1965, the rank structure of the CCN did not represent either a complete acceptance of traditional naval grades or a Sovietization of them. Naval officers held one of 12 ranks which were divided into three groups of four grades each. The ranks were identical with those used by the ground and air forces except that the term "navy" followed the term when full official titles were used. The enlisted men went through seven steps from recruit to the equivalent of chief petty officer. The officer candidate of midshipman grade probably still continues.

3. Procurement

Just as the composition of the Chinese Communist Navy underwent a marked change since its creation in 1949, so too was the program for personnel procurement modified to meet the long-term needs of a growing navy. The nucleus of the officer corps of the navy was originally drawn from among the officers of the Chinese Communist Army which had won the Civil War. Although without previous naval experience, these individuals were of unquestionable political loyalty. Their lack of naval experience was somewhat offset by the professional utilization in the service of certain former high-ranking Nationalist naval officers who had defected when the Communists overran the mainland. The enlisted ranks were comprised largely of coastal fishermen whose familiarity with the sea and elementary maritime subjects was expected to qualify them for shipboard duty with the minimum of formal training. These personnel were termed "volunteers," but recruitment was generally accomplished by means of various economic and political pressures. Enlistment in the navy at this stage probably was even less voluntary than in other branches of the armed forces because of the more specialized talents required for this service. Under this conscription system there was no specified term of active service, and discharge was generally granted only for physical disability.

As the navy continued to expand, a need for enlisted personnel with greater technical aptitude than that of the average illiterate coastal fishermen was recognized. Training facilities were gradually expanded, and men were recruited in increasing numbers from among youths who had some elementary schooling. The officer structure also underwent marked change. Officer candidate schools were expanded and new ones established so that a new supply of officers specifically trained for naval service under Communist auspices would become available. As these new officers were fed gradually into the service, the former Nationalist officers were shifted from operational billets to training activities. The current process of "Communizing" the junior officer ranks ultimately will provide the basis for gradual replacement of former army officers with professional naval officers in the senior grades.

In July 1955 the Military Service Law was instituted for all branches of the People's Liberation Army (PLA). Under this law, registration for the PLA was made compulsory for all youths upon reaching the age of 18; however, due to the vast manpower of Communist China, only a small percentage of those eligible is actually called. Annual callup and registration normally takes place between 1 November and the end of February. Originally the terms of peacetime obligated service was fixed as 3 years for the ground force, 4 years for the air force, and 5 years for the navy. On 19 January

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

THDRAW

1965, the Standing Committee of the National People's Congress announced the extension of these terms of service to 4 years for infantry troops; 5 years for other ground troops, air force, and shore-based navy; and 6 years for shipboard naval personnel. The armed forces reserve the right to change the period of service or to transfer servicemen from one branch to another should circumstances so dictate. Provision has also been made for personnel to voluntarily extend their term of active service by periods of a year or longer, current military needs permitting. At the termination of their active duty period, personnel are released to a reserve status, in which periodic training is required.

Recruitment under the annual conscription plan is handled on a provincial basis. Naval recruits are drawn predominantly from coastal provinces because of the greater availability of youth with maritime experience and proximity to training centers. The vast population of China permits recruiting on a fairly selective basis. The conscription law stipulates that youths who are the sole support of a family may be exempted from service and that deferments shall be granted to fulltime students in upper-middle (high) schools or universities. Beginning in 1961, however, a high percentage of urban students has been recruited. Upon completion of their schooling, deferred students may apply for appointment to an officer candidate school.

Conscripts are assigned to the different branches according to the needs of the armed forces and without reference to personal preference. Nevertheless, the navy usually is assigned a high quality of recruit because of the technical knowledge which must be absorbed. It may well be that the complexities of naval service and the extensive training required for many billets have caused the term of enlisted service to be set at a longer period than that of the other armed forces.

4. Conditions of service

Until 1955, the philosophy of rankless society pervading the military structure was reflected in the pay and allowances of all personnel. Remuneration for all was made in the form of an "issuing system" whereby men were given standard amounts of food and clothing and a modest allowance for personal use. The personal allowance was much higher for officers than for enlisted men.

As part of the military reorganization in 1955, the rank structure of the navy was changed so as to provide clear identification of personnel with respect to station and responsibility. Included in this revision was the adoption of two pay systems for officer and enlisted personnel, which were in effect a modification of the existing method. The "supply system" applied to enlisted grades and the "salary system" applied to officers. Under both systems, rates of pay depended on a combination of rank, length of service, and position held. For example a senior lieutenant's pay as commanding officer of a ship might differ slightly from his pay as a guard company commander. Pay ranges for the various commissioned and enlisted naval grades were as follows:

	Estimated monthly pay in U.S. dollar equivalents
Lower to senior admirals	162.00–244.00
Lower to senior captains	50.00–138.00
Lower to senior lieutenants	26.00–49.00
Warrant officers	4.00–6.00
Petty officers	2.50
Recruits and seamen	2.50

Although personal ranks were abolished on 1 June 1965, the pay structure probably is comparable to that of the previous 10 years. Base pay is now determined on the position held rather than on rank. In addition to the base pay, personnel assigned afloat receive sea pay, and submariners and flying personnel receive hazardous duty pay. Base pay for both officers and enlisted men increases with time in service.

Details of current conditions of service are not available; however, many of the conditions existing prior to June 1965, discussed below, probably are still applicable.

Under the "salary system," officers received a yearly issue of the basic uniform; all other clothing had to be purchased. All officers were required to pay for meals; however, those on sea duty received a subsistence allowance of the equilavent of approximately US$18.00 per month. Single and unaccompanied married officers did not pay for their housing, but married officers whose families lived in quarters were charged a nominal rent. The "supply system" theoretically provided the main necessities of life for enlisted men and warrant officers. Items of clothing and bedding were issued free periodically throughout a man's term of service. Rations were supplied without cost to shore duty personnel, but those on sea duty received a subsistence allowance and were required to pay for food. Housing under the "supply system" was provided without cost; however, there were no accommodations for dependents.

Additional allowances were paid to noncommissioned officers who were retained in service beyond their normal release dates. Upon retiring from active duty, enlisted men received a demobilization bonus of the equivalent of about US$3.00 for each year of service. Personnel retired for disability were entitled to medical expenses and a pension. The government, through the various political departments, assisted all veterans in their readjustment to civil life. In Canton, for example, the provincial readjustment bureau provided a placement service for new dischargees. Men were theoretically given a choice of jobs within their talents in order that the government might continue to benefit from in-service training. The government also provided a pension for the dependents of those who died on active duty. Reserve personnel received living and travel expenses while on reserve training duty.

Authority NND 45333
By JW NARA Date 9/2/10

Periods in grade for promotion within the officer structure were stipulated by law. In peacetime the minimum service in grade was fixed as follows: lower and middle lieutenant, 2 years; upper lieutenant through middle captain, 3 years; upper captain, 4 years; and senior captain and admirals, not fixed. Promotions to middle, upper, and senior lieutenant were approved by the Ministry of National Defense, by the navy department chiefs, or by fleet commanders. The Ministry of National Defense approved promotions to all grades of captain. Flag ranks were conferred only by the State Council and according to the requirements of the service, there being no specified time in grade.

In wartime, promotion periods for officers on combat duty were generally shortened. A spot promotion might be awarded at any time in cases of special merit or in situations where the officer had to fill a billet for which a higher grade was prescribed. Although advancement normally was made by grade, promotion by two grades was authorized under extraordinary circumstances. Reserve officers might be advanced in rank, but the minimum time-in-grade requirements were twice those for officers on active duty.

In the event that an officer failed to meet the normal physical requirements or was found lacking in professional ability, he might be passed over for promotion. Age limits were prescribed for each rank beyond which an officer might not remain on active duty in peacetime. The ages for mandatory retirement from active duty were fixed as follows: lower and middle lieutenant, 35; upper and senior lieutenant and lower captain, 45; middle captain, 50; upper and senior captain and lower admiral, 55; middle admiral, 60; upper and senior admiral, not fixed. When becoming over-age in grade, the officer was released and placed in the reserve. The officer thus retired spent 5 years in Class 1 reserves and then 5 years in Class 2 reserves. He was then fully retired from the navy.

Officers and warrant officers on active duty were required to take 4 weeks of privilege leave per year. Such leave was often more in the nature of an assignment than a vacation, because the time and place it was to be taken was prescribed by the navy. Families frequently were unable to accompany the officers on leave because of travel or housing conditions. Enlisted men were not entitled to privilege leave but could be granted compassionate leave in the case of serious illness or death in their immediate family. Periods of special leave were often authorized to reward meritorious service.

5. Naval uniforms and insignia

The same law that abolished ranks in the armed forces on 1 June 1965 also abolished insignia of rank and service and differences between the uniform of officers and enlisted men; it stipulated also that the naval uniform should be like that of the other services except that the color be dark grey. Headgear worn by all officers and enlisted men is the "*chieh fang* (liberation) cap." A waist belt may also be worn by all personnel, while

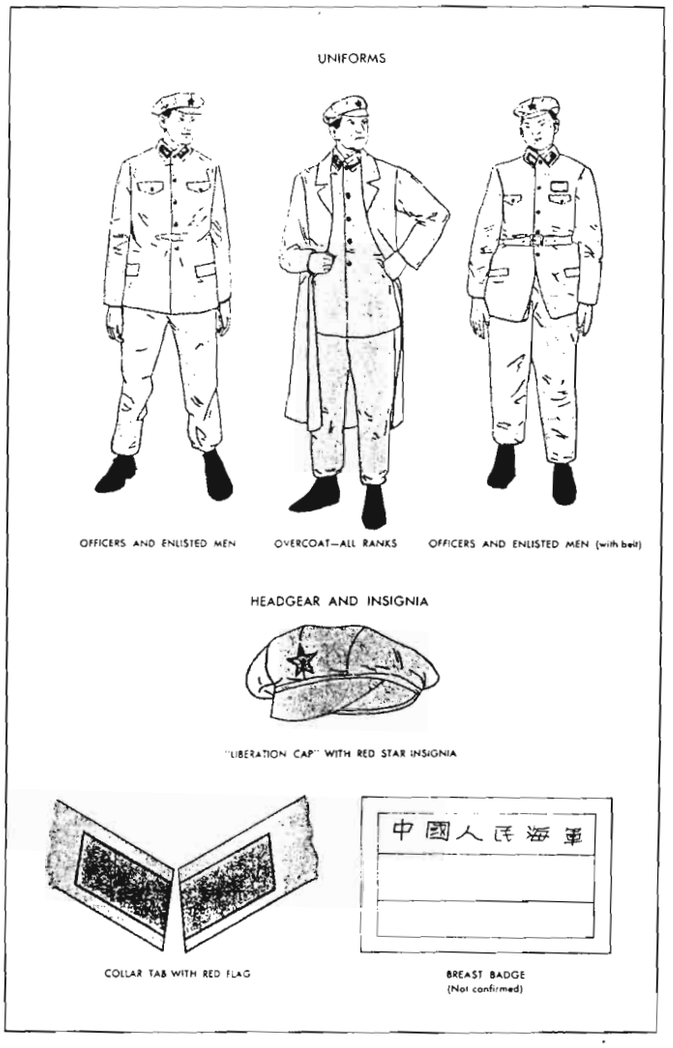

FIGURE 6. CHINESE COMMUNIST NAVY NEW UNIFORM AND INSIGNIA

a red star headgear insigne and red tabs appear on the uniform collar. A white rectangular cloth patch worn on the left breast with the inscription "Chinese People's Navy" in Chinese characters has been reported. This patch may be optional and may include the wearer's name (FIGURE 6).

The most significant characteristics of the original uniforms of the Chinese Communist Navy was simplicity. Born out of a theoretically "popular uprising," these uniforms were designed to minimize militarism, rank, and status. The officer uniform was little more than a replica of the peasant garb worn by the other Communist leaders with special buttons and a military cap. The enlisted uniform was basically a copy of that used in the Soviet Navy but without insignia of grade.

Subsequently, a number of highly significant modifications were made in the naval uniforms. The most important of these was the adoption of rank and rate insignia, with resultant stratification of naval personnel. Following the original modifications, braid and military trappings were gradually added to the uniforms of the officers. The enlisted uniform was modified through the adoption of four white stripes on the collar and cuffs in place of the three which originally had been carried over

DECLASSIFIED
Authority NND 45 333
By JW NARA Date 9/2/10

from the Soviet Navy. The net effect of these changes added a more military and nationalistic character to the uniforms.

The recent change back to the simple uniform of the pre-1955 days was motivated by a desire to recreate the revolutionary armed forces and promote democracy between the ranks. The Chinese Communist Navy now wears a uniform that is distinct from and no longer reflects the influence of the Soviet Union.

F. Reserve and mobilization systems

1. Ships

All seaworthy ships in the Chinese Communist Navy are maintained in active service. A number of overage ships have been reassigned to limited service on inland waterways as cargo carriers or patrol craft. Their general condition, however, is thought to offer little mobilization potential in the event of a national emergency. It is unlikely that any ships will be formally relegated to a reserve status.

The large fleets of coastal fishing and cargo junks constitute a sizable pool of potential inshore patrol and surveillance craft. To date, however, the only effort to give these craft official status as a naval reserve force has been the incorporation in 1959 of fishing communes into the People's Militia. If the announced reserve training program is fully implemented, these craft could be mobilized on relatively short notice into an effective supplement to conventional naval patrol forces.

2. Personnel

One of the salient features of the 1955 Military Service Law was the establishment of a military reserve structure to supplement the active forces of the People's Liberation Army. This reserve was to be comprised of officers released from active duty and enlisted men discharged after their 5-year terms of conscripted service. The first naval discharges under this program presumably took place in early 1961. Any discharges made prior to the expiration of the 5-year terms of the first conscripts under this law probably involved only persons found unsuitable for naval service who probably would not be desired for reserve service.

The national conscription law provides for two categories of reserves. Category I consists of personnel released from active service, while Category II consists of those who are eligible for service but have been deferred or exempted. Both categories are divided into two grades: Grade 1 is composed of persons 30 years of age and under, and Grade 2 includes those 31 through 40 years of age. It is also stipulated that officers retiring from active service will be placed in Category I, the grade depending on age. From the standpoint of comparative readiness, Category I might be considered a ready reserve and Category II a standby reserve. Periodic "collective training" is prescribed for both categories. All of the foregoing terms were stipulated without reference to military branch. Apparently the Category II reserve constitutes a general pool of manpower without specific branch assignment and, for practical purposes, the only true naval reserves are in Category I.

Presumably, naval personnel have been returned to civilian life upon expiration of service terms which commenced prior to the 1955 law. While no formal reserve status has been announced for naval personnel thus released, they probably are subject to periodic training and recall.

Among the coastal populations of Communist China today there are countless thousands of individuals who have had some experience in merchant ships, junks, and other assorted craft. Cognizant of the reserve potential these people might provide, the Communist government has sought gradually to incorporate selected numbers into the People's Militia system. Some are being organized to perform mobilization duties of patrolling beaches or assisting in coastal defense, and a few have received a short indoctrination aboard ship. Others who belong to fishing communes are being given simple indoctrination in inshore patrol, using their own sail and motorized fishing junks. By sheer numbers alone these civilian coastal people could, with only minimal formal indoctrination, comprise a useful emergency adjunct to conventional forces.

Among the premilitary-age youth, groups have been organized to encourage an interest in the navy and in maritime subjects. Organized nationally under the Communist China Central Defense Athletic Association, these local "defense sports clubs" and "navigation clubs" hold meetings devoted to political indoctrination, aquatic sports, and model shipbuilding. Although these groups could hardly be considered naval reserve organizations, they do orient the youths toward naval service, and their members are expected to enter the navy upon reaching service age.

3. Merchant marine and other auxiliary forces

As of 1 September 1965, the Chinese Communist merchant marine consisted of 173 ships of over 1,000 gross register tons (GRT), aggregating 695,496 GRT and 902,851 deadweight tons (DWT).* The Chinese merchant fleet, in terms of tonnage, ranks 25th among maritime fleets of the world, and is the 4th largest of any Asian nation. Although the size of the fleet has increased about 5-fold since 1949, it is not adequate to meet the maritime transport requirements of the country. Moreover, because a large number of ships are small, are overage, and have slow speeds, the fleet as a whole is substandard as compared to other maritime fleets of the world. A total of 117 ships range from 1,000 to 4,000 GRT. There are 84 ships 20 years of age or less and 89 ships over 20 years of age; of these totals, 21 ships are 5 years of age or less and 34 ships are over 40 years of age. The fleet consists primarily of steamships, 70 coal-fired and 52 oil-fired; the remaining 51 ships are

* Includes five LST's which are subordinate to Yangtze River authorities but are used occasionally on coastal voyages.

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10
WITHDRAWAL NOTICE

equipped with diesel engines. The speed of the fleet is substandard; 76 ships are capable of speeds in the 8- to 10-knot range, 78 ships, in the 11- to 12-knot range, and only 19 ships are capable of speeds of 13 knots or more. The following tabulation indicates fleet composition by type, number, and tonnage:

Type	Number	Total GRT	Total DWT
Dry Cargo	130	522,481	722,316
Dry Cargo-passenger	13	37,064	28,478
Passenger	13	47,734	24,510
Tanker	17	88,217	127,547
Total	173	695,496	902,851

In the period 1962-63, Communist China made no progress in expanding its merchant fleet. The production of ships at domestic shipyards, as well as the acquisition of ships from foreign sources, was drastically curtailed as a result of economic difficulties. During the next 20 months the strength of the fleet underwent a gradual increase as new and secondhand ships were added. In this period there was a net gain of 12 ships totaling about 160,000 DWT.

Operating in conjunction with the fleet composed of ships 1,000 GRT and over are about 180 smaller vessels under 1,000 GRT, totaling about 45,000 GRT. In addition, vessels of the river fleet over 1,000 GRT are estimated to number 25 and total about 50,000 GRT.

In addition to the ships under its own flag, it is believed that Communist China has beneficial ownership of 9 other ships totaling 91,016 DWT consisting of 5 Polish flag cargo ships (49,486 DWT), 2 Czechoslovak cargo ships (17,315 DWT), and 2 Albanian flag cargo ships (24,215 DWT).

The cargo-carrying capacity of the merchant fleet is further augmented by a large number of trading junks which are gradually being motorized. The junk fleet is an indispensable means of transport, both coastal and inland. Current figures on the size of the junk fleet are not available but, according to incomplete statistics for 1960, there were approximately 360,000 junks in Communist China with a combined freight capacity of 3-4 million tons. Utilizing junks, Communst China may augment its naval fleet capability in an amphibious or logistic support role. Also, these vessels, while not designed for conventional warfare, could serve as coastal-patrol or mine-laying craft. The following is a list of approximately 10,000 powered and sailing junks, of the total 360,000 estimated to have a military capability, for logistic support or short-haul troop lift:

	GRT	DWT
Fukien and Chekiang provinces:		
2,562 motorized junks	141,070	207,372
4,805 sailing junks	192,400	282,534
Chekiang province:		
2,600 motorized junks	72,000	105,840
Kwangtung province and Hainan Island:		
898 motorized junks	23,076	33,921
Total:		
10,865	428,546	629,667

Using a 70% availability figure, the overall lift capability of the above junk force in support of military operations is 370,000 tons of cargo or approximately 21 infantry divisions of lightly equipped troops with only crew served weapons.

Commencing in 1961, Communist China employed several of its own ships on international trade routes. During the next 4 years, the number of Chinese ships assigned to these routes increased to 21 (195,065 DWT); of this total, 14 are employed on shipping routes between Canton and international ports in southeast Asia, Africa, and Europe, and 7 ships are employed between north China and Japan. However, the preponderance of the international shipping requirements of Communist China is currently being met by ships of the non-Communist countries, supplemented by ships of Communist country registry.

The remaining 152 ships of the merchant marine are divided unequally into two fleets, one operating north of Taiwan and the other to the south. The fleet operating north of Taiwan contains the larger segment of the merchant marine (124 ships—593,410 DWT), and serves all coastal ports from Foochow to the northern extremity of the mainland China coast. The area of operation for the southern fleet (28 ships—114,376 DWT) includes North Vietnamese ports, Hainan Island ports, Paracel Island, and mainland ports only as far north as Swatow.

Government ownership of the Chinese Communist merchant fleet will facilitate rapid integration of this fleet into the navy in time of war or other emergency. The administration of all merchant shipping, including coastal and river, has been vested in the Ministry of Communications. Operational control over most shipping operations in east and north China is exercised by the Marine Transport Bureau, Shanghai; in south China by the Kwangtung Province Navigation and Transportation Bureau, Canton; and in international shipping by the China Ocean Shipping Agency, Peking.

The relatively small size of the merchant fleet and its low overall transport capability make it an insignificant factor as an auxiliary force in wartime. The logistic and troop transport capability of the fleet is estimated in the following tabulation:

Type	Number	Cargo (DWT)	Estimated troop capacity
Tankers	17	112,200 (841,500 bbls.)	*None.*
Cargo	130	606,700	**None.*
Cargo-passenger	13	23,900	11,000
Passenger	13	20,600	15,000
Total	173	763,400	26,000

* Conversion of some cargo ships into troop carriers is highly probable.

Some ships of the fleet would be useful in an auxiliary role. Eight of the cargo ships are former U.S. LSTs converted for commercial use. These ships probably

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

could be reconverted and used to augment the amphibious capability of the armed forces. One cargo ship is equipped with a 165-ton boom, 1 cargo ship with two 60-ton booms, 16 cargo ships with 50-ton booms, and 11 other ships have 30- or 40-ton booms. These are the only ships which could be employed as auxiliaries in operations requiring self-unloading of heavy equipment.

4. Adequacy of mobilization system

The close control which is being developed by the central government over all aspects of national life in Communist China is conducive to smoothness in the mobilization of reserve personnel. Conscript mobilization would be facilitated by the thorough documentation and comprehensive local party records kept on all citizens. As the navy usually maintains both the ships and their complements at full strength even in peacetime, no equipment would be immediately available for any expansion of the afloat forces in time of war. How much additional equipment would be made available by the U.S.S.R. or could be built by China would depend upon circumstances at the time. It would be possible, on the other hand, to undertake a wholesale expansion, or development as the case may be, in coast defenses and in a conventional naval infantry force without encountering any substantial equipment problem.

G. Training

1. General

The immediate need for a large number of personnel for the naval force which came into being in Communist China in 1949 placed heavy requirements on the existing military training establishment. Initially, the Communists had no naval training facilities and extensive utilization had to be made of such ex-Nationalist facilities as were usable. Temporary schools designed to produce a naval officer cadre were quickly established at Tsingtao, Shanghai, Huang-pu (Whampoa), and Nanking, and a more permanent naval academy was started at Dairen. An even larger number of enlisted training schools sprang up, with branches at nearly every major coastal city. The majority of the instructor billets and other key positions in the new naval training establishment were filled by former Nationalist career naval officers who had defected to the Communists. Most courses not essentially naval in character were taught by Communist army officers.

The key role in establishing the naval training system, however, was played by the Soviet Navy. The U.S.S.R. not only supervised the establishment and development of the naval schools but also provided, through the Soviet Naval Advisory Mission, a large number of naval officers to staff and, in some instances, head the new schools. In the beginning Soviet naval advisers were stationed temporarily aboard almost all CCN ships, where they played a vital role in the technical and operational aspects of underway shipboard training. They were particularly essential in training Chinese crews for the submarines and other modern combatants transferred from the Soviet Pacific Fleet or built in Communist China. Soviet personnel are known to have been assigned to CCN motorized junks, where they assisted in perfecting unconventional minelaying techniques. In addition, a large number of naval schools in the U.S.S.R., including academies at both Leningrad and Vladivostok, were opened to the Chinese.

As the CCN naval training system progressed and an effective cadre of young career naval officers gradually was formed, the temporary naval officer schools were closed and their functions transferred to the permanent naval academy at Dairen. Nearly all of the key billets were turned over to hard-core Chinese Communist naval officers. Most of the ex-Nationalist naval officers, their skills having been largely assumed by the Communists, were retired to politically less sensitive billets. The number of Soviet training advisers likewise was substantially reduced. At the time of the withdrawal of Soviet technicians in 1960, no advisers were believed to be serving in CCN ships. About 150 members of the Soviet Naval Advisory Mission, who were working with the shore establishment, have been returned to the U.S.S.R.

During the period since the creation of the Chinese Communist Navy, the Chinese have developed a widespread program for the training of professional naval officers and petty officers. It is difficult to make an accurate evaluation of the effectiveness of this training, but the reduced reliance on outside professional assistance indicates that the Chinese themselves feel that the system is adequate to meet current requirements.

The ultimate test of a naval training program is, of course, the proficiency that the navy demonstrates in the performance of its missions. Opportunities to observe CCN submarines in operation have been too infrequent to permit a conclusive evaluation, but based on the little at-sea time of the submarines and the lack of modern surface forces with which to operate, the proficiency of the Chinese Communist submarine force is believed to be below Western standards. Many components of the surface forces have been sufficiently observed to provide some insight into the adequacy of training. While coast defense capabilities have yet to be tested in strength, such elements as motor torpedo boats which have seen action against the Chinese Nationalist Navy have exhibited a high degree of combat readiness. In general, the patrol forces are the best trained, as their missions are performed on a daily basis.

Communist China has emphasized amphibious warfare training, but, here again, there have been no opportunities to test the results of such training on a large scale. The assault on Hainan Island in April 1950 was little more than a junk crossing and was conducted before the CCN had developed an amphibious doctrine. The I-chiang Shan (islands) were taken in 1954 by a

Authority NND 45333
By JW NARA Date 9/2/10

conventional amphibious assault, complete with aerial bombardment and support from both land-based and naval artillery, but the invasion encountered only light resistance.

2. Facilities

Naval training schools are divided into the following categories: 1) officer candidate; 2) specialized, staff, and advanced training for officers; and 3) preparatory, basic, and specialized training for enlisted personnel. Some naval training facilities give a combination of several of the above types of instruction. Similarly, a number of joint service schools provide various types of courses for staff and high command assignment. Recruit training for all service conscripts is given at collective training centers. These facilities, while giving training essential to the naval enlisted training program, are believed to be army-controlled and will, therefore, not be considered naval schools for purposes of this Section.

The locations, names, and training levels of all identified naval schools are shown in the following tabulation. Only formal training commands are included, although basic enlisted training is given to some extent at most naval shore facilities. Where the formal name of the training facility or command has not been ascertained, the type of training given is indicated in parentheses.

Location	Facility or command	Level(s) of training
Dairen	First Naval School	Officer candidate.
Do.	Second Naval School	Officer: advanced, command.
Port Arthur	(Submarine school)	Officer: specialized, advanced, command. Enlisted: specialized.
Hu-lu-tao	First Naval Air School	Officer: basic air training. Enlisted: air and ground crew training.
Peking	PLA War College*	Officer: advanced, command, staff.
Do.	PLA Higher Military Academy.*	*Do.*
Do.	PLA Political College*	Officer: command, staff.
Do.	PLA Rear Services College.*	Officer: staff corps.
Chefoo	Coastal Artillery School	Officer and enlisted; elementary, advanced.
Tsingtao	Combined Naval School:	
	Third Naval School	Enlisted: fleet, preparatory.
	Fifth Naval School	Officer: specialized, advanced (includes advanced submarine school). Enlisted: specialized (includes advanced submarine school).
Do.	Second Naval Air School	Officer: aviation engineering.
Shanghai	(Fleet school)	Officer: specialized, advanced. Enlisted: fleet, specialized.
Nanking	Fourth Naval School	Enlisted: fleet.
Do.	PLA War College*	Officer: advanced, command.
Do.	Naval War College	Officer: advanced, strategy and tactics.
Huang-pu (Whampoa)	Central-South Naval School.	Officer: specialized, advanced.
Shachiao	South Naval School	Enlisted: fleet, specialized.

* Joint schools.

3. Officer

During the early stages of the growth of the CCN, temporary schools for producing naval officers were established at Tsingtao, Shanghai, Nanking, and Huang-pu (Whampoa). Little is known of these early schools beyond the fact that they were created on a crash basis and, owing to their transitory existence, probably bore little resemblance to conventional well-ordered naval academies.

The permanent naval academy was established in 1950 and is known as the First Naval School. Situated near Lao-hu T'an, a southeast suburb of Dairen, the academy is reported to have an enrollment of over 1,000. Enrollees are admitted annually, in September, after several (probably 6) months of basic naval indoctrination at the Naval Preparatory Section of the Third Naval School at Tsingtao. Upon successful completion of the 4-year course, the officer candidates are graduated, depending on class ranking, as lower or middle lieutenants in the navy.

The principal prerequisite for entering the school from civilian life is that the applicant be a graduate of a Chinese upper-middle (high) school. (An exceptional candidate who has not completed upper-middle school may be accepted, but would be placed in a separate division.) In addition, he must pass a competitive entrance examination which is largely a test of mechanical aptitude. In the earliest days of the navy all applicants for the naval academy had to be either members of, or recommended by, the Communist Party. In the interest of quick development of a more competent officer cadre, it became necessary to subordinate this stress on political background to considerations of education and aptitude. More recently there has been a reemphasis on Party affiliation; though not a formal requirement, Party or a Communist youth movement membership is now virtually essential for admission to the academy. It is interesting to note that most officer candidates (midshipmen) come directly from civilian life. Only a small number of outstanding young enlisted naval personnel are allowed to take the yearly competitive examination with the other applicants.

The teaching staff at the academy is composed about evenly of defected ex-Nationalist naval officers and of young Communist-trained career naval officers. As the latter have become available only comparatively recently, many of the earlier teachers had to be provided by the

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Authority NND 45333
By JW NARA Date 9/2/10

Soviet Naval Advisory Mission or by the Chinese Communist ground forces. The curriculum includes the usual courses in seamanship, ordnance and gunnery, navigation, engineering, communications, and mine warfare. Other courses are given in the basic sciences and in political subjects. The time devoted to political indoctrination is disproportionately large. Extensive use is made of Soviet- and U.S.-manufactured ordnance and navigational equipment, as well as Soviet and Chinese training mockups, models, and charts. Facilities have been described as adequate, and there are excellent standardized training aids, including an ASW trainer.

No ships are specifically assigned to the First Naval School for purposes of shipboard training. The students do, however, spend the three summer months of each year aboard regular navy ships operating out of Port Arthur or Dairen. These training cruises do not involve extensive operations at sea but familiarize the officer candidates with shipboard life and routine.

In addition to the naval academy, there are merchant marine schools at Hankow (Han-k'ou), Foochow, and Dairen which are believed to contribute annually a small number of junior officers to the navy, primarily as engineering officers. A Coastal Artillery School is located at Chefoo, but whether it offers a complete officer candidate course or merely a specialist course for previously commissioned naval officers has not been established. Most staff corps officers are educated at joint military schools, such as the PLA Rear Services College in Peking because their numbers are too small to justify special navy schools. Joint political colleges producing junior political officers have been identified at a number of locations. All service corps officers are believed to be given naval orientation at a special CCN school prior to their first commissioned assignment in the navy.

Numerous naval schools or joint service academies give specialized, advanced, command, or staff training to CCN officers. Among these are the Second Naval School, at Dairen; the Fifth Naval School of the Combined Naval School, at Tsingtao; the Central-South Naval School, at Huang-pu (Whampoa); the submarine schools at Tsingtao and Port Arthur; and probably a department of the fleet school at Shanghai. Basic pilot training is given at the First Naval Air School at Hu-lu-tao. Specialized training, probably in aviation engineering, is given by the Second Naval Air School at Tsingtao. The joint PLA War College in Nanking offers advanced and command training to senior naval officers of the rank of lower captain and above. The PLA Higher Military Academy at Peking offers highly advanced command training and possibly refresher courses to flag and general officers of all services. Similarly, the joint PLA Political College, also at Peking, was established to provide advanced political training for senior political officers and for higher ranking captains and admirals. A Naval War College was established at Nanking in 1958 which probably reduced the need for sending naval officers to joint schools. Primary emphasis at the Naval War College is placed on naval strategy and tactics.

4. Enlisted

Enlisted training is handled by an extensive and flexible program. All conscripted military personnel in Communist China first undergo a short indoctrination at the regional recruit centers where they were called up for service. Here the training time is about evenly split between military and "cultural" instruction. The former consists principally of physical exercise, marching, and other elementary indoctrination in matters common to all enlisted military services. "Cultural" instruction includes simple political indoctrination and schooling in personal habits. During this recruit training aptitude and achievement tests as well as detailed physical examinations are given to all personnel to determine their suitability for additional training and service. The results of these tests, weighted in conjunction with the relative service requirements at the time, determine the branch of the armed forces to which recruits are assigned for further training and permanent duty.

Those selected for the navy become naval recruits and assume, for the first time, a strictly naval identity. They are then sent to the naval schools or shore commands for further training. If an individual is to be assigned aboard ship, he is sent to one of the fleet schools for several months. Upon completion of this training, the seaman, no longer a recruit, is assigned to an afloat unit for practical on-the-job training. The duration of this stage is flexible and is determined largely by the ability of the individual and the personnel needs of his department. Those recruits assigned ashore are absorbed directly into a naval command or activity, where they commence on-the-job training without further formal naval schooling. Here again, the length of indoctrination is indefinite and phases out gradually as the need for supervision diminishes. Political training, however, is given continuously to all personnel for the duration of their service terms.

The following fleet schools give training to recruits designated for assignment aboard ship: the Third Naval School of the Combined Naval School at Tsingtao; the fleet school at Shanghai; the South Naval School at Shachiao; and the Fourth Naval School at Nanking.

A number of schools or programs exist to provide advanced training in enlisted specialties. The following schools have been identified with this type of training: the submarine school at Port Arthur; the Fifth Naval School of the Combined Naval School at Tsingtao; the fleet school at Shanghai; and the South Naval School at Shachiao.

The Coastal Artillery School at Chefoo gives both elementary and advanced training to enlisted personnel assigned to coast defense duty. No separate school is known to have been established to train personnel attached to navy antiaircraft artillery units. Whether such indoctrination is accomplished by on-the-job training or at some joint or other service school has not been determined. The First Naval Air School at Hu-lu-tao gives ground and flight crew training.

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

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ard training is essential for both officer and d personnel in the Chinese Communist Navy. icer candidates (midshipmen) spend the three summer nths of each year aboard operating ships. It is ough this same type of on-the-job training that en- d personnel acquire the practical skills of deck sea- ship, signalling, and other shipboard specialties.

nderway shipboard training offers practice in using maintaining machinery and electronics equipment. nery practice with fixed and moving surface targets with aerial targets is held, as are drills in atomic, eriological and chemical (ABC) warfare defense. submarine warfare (ASW) exercises provide ship- d training for both officers and enlisted personnel. t of this underway training takes place during the ine operation of the patrol and smaller craft of the . No CCN ships are known to take extensive train- ruises.

bmarine training at Tsingtao and Port Arthur is lucted almost entirely aboard operating submarines. hasis is upon short-range reconnaissance, minelay- and limited antishipping operations. Western mer- t ships are frequently used as targets for antiship- exercises.

Fleet and force

inimal emphasis is placed on fleet and force train- n the CCN and multiship drills are held only occa- lly. These are largely daytime exercises off Shang- nd Tsingtao involving unsophisticated submarine surface ship exercises. Amphibious exercises in- ng small landing craft occasionally take place at tao, Hangchow Bay, in the Pearl River estuary, in other areas, but there has been little training n might be called a full-scale amphibious rehearsal. tive submarine and antisubmarine training has until t years been limited by the disposition of the forces . Most of the operational "W" and "R" class sub- es are assigned to the North Sea Fleet where only "Gordyy" class destroyers and 8 submarine chasers ssigned that can provide antisubmarine training; nly modern oceangoing ASW ships—the 4 "Riga" destroyer escorts, and 12 of the patrol escorts— the East Sea Fleet with 6 "W" class and 5 older arines with which to operate. The shallow depth ater in which submarine training is conducted, ally 20 to 40 fathoms, makes it difficult to conduct ore advanced submarine training needed for a modern submarine force.

eserve

extensive training program for naval reserves exists nmunist China, although since early 1961 a sizable reserve pool has been formed from personnel re- from active duty. It has been reported that ed military personnel receive reserve training year, but there has been no evidence that persons ed from the CCN are included. Inasmuch as many former sailors return to civilian life in maritime occupations perhaps it has been concluded that a naval reserve training program is unnecessary.

Starting about 1950, paramilitary groups called "seamen's units" and "naval warfare units" were established by Party activists. These organizations were comprised largely of fishermen, shipyard workers, and junk crews and were designed to stimulate interest in the navy and maritime subjects. This informal program has now been succeeded by a national organization, the Central Defense Athletic Association, which has local maritime chapters known as "navigation clubs" and "defense sport clubs" in many of the coastal cities. The clubs ostensibly offer training in navigation but seem designed primarily to build up a navy following among premilitary age groups. The meetings of these navy "activists" are devoted to political indoctrination, aquatic sports, model shipbuilding, and other activities intended to generate enthusiasm for the sea. Although these groups could not be considered a reserve in the conventional sense of the word, promising youths are expected to enter the navy upon reaching military age.

In 1959 provision was made for giving limited coastal defense training to civilians as part of the People's Militia program. Under this system coastal residents report periodically to the nearest naval command for simple indoctrination in mobilization billets both ashore and afloat. There have also been indications that fishing communes have been assigned some formal status in the People's Militia program and that fishermen are given training in coastal patrol using sailing and motorized junks. If all the announced plans for the militia are fully implemented, the coastal residents and fishermen could in time constitute an effectively trained reserve and a useful adjunct to the conventional forces.

H. Logistics

1. Procurement

Supervision of the Chinese Communist naval logistics system is the responsibility of the Chief of Navy Rear Services Department. His immediate function is to direct the logistics staff at naval headquarters which controls economic planning, finance, procurement, storage, distribution, transportation, and the construction and maintenance of buildings and facilities for the entire navy. At the lower echelons he is represented on the staff of each installation or command by rear service officers who assume the initiative in local supply matters.

Details of the mechanics of procurement and supply in the navy have not been determined, but it is assumed that the local rear services officer is empowered to procure some items, especially foodstuffs, independently within the standard allowances established for his command. Items not available in the local civilian markets, such as munitions, fuels, and spare parts, must be obtained through the chain of command from higher supply echelons. The Navy Rear Services Department itself undoubtedly must obtain its requisitions through

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

the General Rear Services Department of the Ministry of National Defense. Any independent procurement by the navy probably is reviewed by that agency to ensure coordinated military buying.

The Chinese Communist Navy until 1960 was largely dependent upon the U.S.S.R. for its supply of naval ordnance, electronics and propulsion components, and petroleum products. In each of these categories, the situation has substantially improved. Dependence upon outside assistance for some items, however, can still be expected to prevail for the foreseeable future. Chinese imports of Soviet petroleum have to be drawn largely from the Urals-Volga and Caucasian reserves and carried long distances over the heavily burdened Trans-Siberian Railroad or shipped in via seaborne carriers. It is expected that the Chinese will attempt to develop their own oilfields in order to reduce dependence on foreign assistance.

2. New construction, repair, and maintenance

Communist China has been dependent on foreign assistance in developing a domestic capability for building and repairing warships of appreciable size. Prior to the establishment of the Soviet-sponsored ship assembly programs, the Chinese shipbuilding industry produced only small naval craft, such as motorized junks, inshore patrol types, and landing craft. Beginning in 1955, the Soviets assisted the Chinese in building several modern construction facilities, including yards in Shanghai, Wu-ch'ang, and Canton, and in expanding existing shipyards at Dairen and elsewhere. These yards subsequently produced long-range submarines, destroyer escorts, patrol craft, and minesweepers, all from plans and components provided by the U.S.S.R. More recently, the Chinese developed three small patrol designs of their own, which were produced at several yards. The present level of naval construction is probably equal to or slightly greater than the peak experienced during the Soviet technical and materiel assistance period. Though the construction of destroyers has not taken place, as had been expected, the Chinese Communists nonetheless are building submarines, modern auxiliaries, guided missile patrol boats, fast patrol boats, motor torpedo boats, motor gunboats, small amphibious types, and minesweepers.

There is evidence to indicate that dependence on the Soviets (or others) for technical and materiel assistance in shipbuilding has been overcome and that Communist China is rapidly becoming a naval power capable of designing and building any type naval unit as suits desires and goals.

It appears that the Chinese have also implemented systematic upkeep and overhaul schedules for all ship types, and that this program of maintenance and modernization has been in existence for a longer period of time than was previously estimated. Across-the-board, the material condition (outwardly at least) of Chinese Communist naval ships is generally excellent.

3. Centers of supply

Little information is available concerning strategic naval supplies in Communist China. Sufficient stockpiles for routine requirements and most short-run emergencies are known to be maintained at the major naval bases. Stocks of additional supplies, although less extensive, exist at the other naval bases. The Chinese Communist naval bases are well dispersed, and, excluding those of insular location, all have access to rail or road facilities. This situation gives the fleet the potential for considerable coastwide mobility with continued logistic support. Items common to all branches of the PLA are generally obtained through the rear services department of the military region command.

I. Ship design and characteristics

The Chinese Communist Navy is by composition a strategically defensive force. Practically all of the surface combatant ships and some of the submarines are basically of coastal design, having neither the size nor the endurance necessary for unsupported distant operations. Only the medium range arm of the submarine force, composed of "W," "G," "R," and "S-1" class units, is capable of operational employment beyond a range of 2,000 nautical miles without logistical support.

On a tonnage basis most of the ships of the CCN are of World War II or prewar construction. The greatest combat potential, however, is provided by ships originating in the U.S.S.R. and Soviet-designed ships assembled in Chinese Communist yards. The Chinese Communists are beginning to come of age in their building programs and, in the future, can be expected to design and build all types of ships as suits their purpose. Of the Soviet transfers, the oldest are the Gordyy class destroyers and "S-1" class long-range submarines, both built around 1941. All other transfers are of postwar construction and consist of "Kronshtadt" class submarine chasers, "P-4" class motor torpedo boats, and T-43 class fleet minesweepers. Chinese Communist shipbuilding commenced in 1955 and has included five major classes of Soviet-designed ships: "W" class medium-range submarines, "Riga" class destroyer escorts, "Kronshtadt" class submarine chasers, "P-6" class motor torpedo boats, and T-43 class fleet minesweepers. At the time of their initiation in Chinese yards, all of these programs represented the latest Soviet designs then existing, designs whose units even today comprise the most numerous operating classes of their respective types in the Soviet Navy. While these ships were assembled in Chinese yards, they would appear to be in no way modified from their original design and are presumed to have characteristics and capabilities identical to those of their Soviet counterparts.

In addition to assembling these U.S.S.R.-provided ship components, the Chinese have built a "G" class ballistic missile submarine, are building "R" class medium-range submarines, have built a modern submarine tender, are building minesweepers, and have independently copied

DECLASSIFIED
Authority NND 45333
By JW NARA Date 9/2/10

...ss-produced at least one foreign naval design—...I.S. "LCM Mk6" class LCM; this relatively un-...licated landing craft was copied using craft cap-...from the Chinese Nationalists. They have also ...endently evolved and produced some patrol boat ...s. They include the "Whampoa" class patrol craft ...), the "Swatow" class motor gunboat (PGM) and ...Shanghai" class fast patrol boat (PTF).

...other ships in the Chinese Communist Navy were ...ucted in the United States, the United Kingdom, ...pan and date from as early as 1910, most ships ...g been produced just before or during World War ...These ships, which include principally patrol and ...ibious types, had been acquired by the Chinese ...nalists after the war. Most had been damaged or ...at least in a rundown material condition when they ...nto Communist hands in 1949. Since that time, however, all salvageable ships have been reconditioned or rebuilt, most being equipped with modern Soviet armaments and electronic components.

Because of the long and somewhat irregular coastline, the navy has to maintain a large number of patrol craft (YP) and other miscellaneous service craft (YAG). The almost 400 service craft include a large number of small coastal motor junks, converted from civilian craft. These craft are suited for close inshore patrol and provide the navy with an effective, easy-to-maintain surveillance force.

The strategic characteristics of the major Chinese Communist Navy ships are shown in FIGURE 7. For more detailed characteristics, see Defense Intelligence Agency publication *Naval Ships of Eastern Asia* (DIA-AP-1-230-2-3). A number of typical Chinese ships are shown in FIGURES 8 through 13D.

FIGURE 7. CHARACTERISTICS OF NAVAL SHIPS

IDENTIFICATION	CHARACTERISTICS	ARMAMENT	REMARKS
...stroyer (ODD)			
...et "Gordyy" class (4 units)..	2,039 tons (full load).....	4 5.1''/50 guns.....	Transferred from U.S.S.R. in 1954–55. Surface ships normally classified as "old" after 20 years of service.
...NSHAN, CHANGCHUN, FUSHUN, CHI LIN.	370'03''L, 33'06''B, 12'06''D.	8 37-mm guns (twin).	
...mpletion years: 1941 on-wards.	35 knots; 850 n.m. (present max.).	4 12.7-mm guns.	
	20 knots; 2,640 n.m. (economical).	6 21'' torpedo tubes.	
		12 total torpedoes.	
		25 depth charges.	
		60 total mines.	
...yer Escort (DE)			
...et "Riga" class (4 units)....	1,100 tons (standard).....	3 3.9''/56DP guns.....	Assembled in Chinese Communist yards.
...I'ENG TU, KUEI YANG, KUEI LIN, K'UN MING.	1,300 tons (full load).	4 37-mm guns (twin).	
...mpletion years: 1956–58.	298'07''L, 33'06''B, 9'10''D.	3 21'' torpedo tubes.	
	28 knots; 700 n.m. (present max.).	1 Ahead-throwing ASW weapon (24 projectiles).	
	15 knots; 2,000 n.m. (economical).	24 depth charges.	
		26 mines.	
...ic Missile Submarine (SSB)			
...et "G" class (1 unit).....	2,350 tons (surfaced).....	6 21'' bow tubes.....	Constructed in Lü-ta Shipyard, Dairen.
...mpletion year: 1964.	2,800 tons (submerged).	4 21'' stern tubes.	
	320'00''L, 28'00''B, 21'00''D.	24 total torpedoes.	
	17.5 knots; 6,250 n.m. (max. surface).		
	16.0 knots; 12 n.m. (max. submerged).		
...rine (SS)			
...et "R" class (1 unit).....	1,055 tons (surfaced).....	4 21'' bow tubes.....	Constructed in Kiangnan Shipyard, Shanghai.
...mpletion year: 1963.	1,355 tons (submerged).	2 21'' stern tubes (non-reloadable).	
	249'04''L, 20'08''B, 16'05''D.	12 total torpedoes.	
	18.5 knots; 2,750 n.m. (max. surface).		
	15.5 knots; 12 n.m. (max. submerged).		
...et "W" class (24 units).....	1,030 tons (surface).....	4 21'' bow tubes.....	Assembled in Chinese Communist shipyards. Older units have 25-mm (twin) guns.
...mpletion years: 1956 on-wards.	1,320 tons (submerged).	2 21'' stern tubes (non-reloadable).	
	249'04''L, 20'08''B, 16'05''D.	12 total torpedoes.	
	18.5 knots; 2,750 n.m. (max. surface).		
	13.5 knots; 13.5 n.m. (max. submerged).		
...et "S–1" class (4 units).....	840 tons (surface).....	1 3.9''/51 gun.....	Transferred from U.S.S.R. in 1954–55.
...mpletion years: 1941 on-wards.	1,070 tons (submerged).	4 21'' bow tubes.	
	255'10''L, 21'00''B, 14'05''D.	2 21'' stern tubes.	
	19.5 knots; 3,380 n.m. (max. surface).	12 total torpedoes.	
	9 knots; 9 n.m. (max. submerged).		

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Authority NND 45333
By JW NARA Date 9/2/10

FIGURE 7. CHARACTERISTICS OF NAVAL SHIPS (*Continued*)

IDENTIFICATION	CHARACTERISTICS	ARMAMENT	REMARKS
Submarine (SS) (*Continued*)			
Soviet "M-V" class (3 units).... **Completion years: 1950 onwards.**	350 tons (surface)..... 430 tons (submerged). 167'00"L, 16'00"B, 12'00"D. 18 knots (max. surface). 8 knots; 10 n.m. (submerged max.).	1 45-mm/46 gun (semiautomatic). 4 21" bow tubes. 4 total torpedoes.	Transferred from U.S.S.R in 1954–55.
Patrol Escort (PF)			
Japanese "Kaibokan II" class (4 units). Completion years: 1945 onwards.	740 tons (standard)..... 1,000 tons (full load). 228'00"L, 28'02"B, 10'00"D. 17 knots (present max.). 14 knots; 4,500 n.m. (economical).	2 3.9"/56 guns..... 6 37-mm guns.	
Japanese "Kaibokan I" class (1 unit). Completion years: 1944 onwards.	745 tons (standard)..... 221'05"L, 27'06"B, 9'06"D. 16 knots (present max.). 14 knots; 6,500 n.m. (economical).	2 or 3 3.9"/56 guns..... 4 to 6 37-mm guns.	
Japanese "Etorofu" class (1 unit). Completion year: 1943.	870 tons (standard)..... 1,020 tons (full load). 254'01"L, 29'10"B, 10'00"D. 19.7 knots (design max.). 16 knots; 8,000 n.m. (economical).	2 3"/50 guns..... 6 37-mm guns.	Previously considered scapped. Reappeared in Tsingtao in November 1964.
Japanese "Ukuru" class (1 unit). Completion year: 1945.	940 tons (standard)..... 1,020 tons (full load). 258'05"L, 29'09"B, 10'00"D. 18 knots (present max.). 16 knots; 5,000 n.m. (economical).	3 3.9"/56 guns..... 6 37-mm guns.	
British "Castle" class (2 units).. Completion years: 1944 onwards.	1,060 tons (standard)..... 1,600 tons (full load). 252'00"L, 36'08"B, 10'00"D. 16 knots (present max.). 9 knots; 7,000 n.m. (economical).	3 5.1"/50 guns..... 6 37-mm guns (twin). 2 37-mm guns (single).	
Old Patrol Escort (OPF)			
British "Bathurst" class (1 unit). Completion year: 1941.	733 tons (standard)..... 185'08"L, 31'01"B, 8'09"D. 9 knots; 3,000 n.m. (economical).	2 3.9"/56 guns..... 5 37-mm guns.	
Japanese "Hashidate" class (1 unit). Completion year: 1941.	990 tons (standard)..... 1,206 tons (full load). 264'00"L, 31'10"B, 8'07"D. 20 knots (design max.).	2 5.1"/50 guns..... 8 37-mm guns.	
British "Flower" class (2 units).. Completion years: 1940 onwards.	1,000 tons (standard)..... 205'01"L, 33'01"B, 17'01"D. 15 knots (present max.).	2 3.0"/56 guns..... 5 37-mm guns.	
GRC single ship..... CH'ANG CHIANG. Completion year: 1929.	464 tons (standard)..... 550 tons (full load). 196'09"L, 26'00"B, 6'00"D. 12 knots (present max.).	1 3" gun..... 1 37-mm gun. 4 45-mm guns. 2 12.7-mm guns.	
Submarine Chaser (PC)			
Soviet "Kronshtadt" class (24 units). Completion years: 1946 onwards.	325 tons (standard)..... 380 tons (full load). 170'00"L, 22'00"B, 6'06"D. 24 knots (present max.).	1 3.35"/52 gun..... 2 37-mm guns. 6 12.7-mm guns (twin).	6 units transferred from U.S.S.R. in July 1955; remainder assembled in Chinese yards.
Large Guided Missile Patrol Boat (PTFG)			
Soviet "Osa" class (1 unit)..... Completion year: 1964.	145 tons (standard)..... 160 tons (full load). 122'00"L, 28'06"B, 5'00"D. 40 knots (design max.). 15 knots; 1,000 n.m. (economical).	4 single SSM launchers.... 2 twin machine gun mounts.	This unit first appeared in the Soviet Navy in 1959.

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FIGURE 7. CHARACTERISTICS OF NAVAL SHIPS (*Continued*)

IDENTIFICATION	CHARACTERISTICS	ARMAMENT	REMARKS
ıtrol Boat (PTF)			
nghai" class (31 units).....	104 tons (full load).....	2 57-mm guns (twin) and	Construction is continuing on
mpletion years: 1959 on-	120′00″L, 18′00″B, 5′04″D.	2 37-mm guns (twin) or	this class. Newer versions
vards.	28 knots (present max.).	4 37-mm guns (twin).	are 130′ in length. Only
			older units carry torpedoes.
Guided Missile Patrol Boat			
TG)			
t "Komar" class (1 unit)....	56.4 tons (standard).....	2 single SSM launchers....	This unit is a conversion of the
mpletion year: 1964.	66.5 tons (full load).	1 25-mm guns (twin).	standard "P–6" PT.
	83′08″L, 23′00″B, 6′00″D.		
	43 knots (design max.).		
	20 knots; 655 n.m. (economical).		
Torpedo Boat (PT)			
t "P–6" class (99 units)....	60 tons (full load).....	4 25-mm guns (twin).....	Built in Chinese yards.
mpletion years: 1953 on-	83′00″L, 20′00″B, 5′06″D.	2 21″ torpedo tubes.	
vards.	45 knots; 545 n.m.	2 total torpedoes.	
t "P–4" class (79 units)....	25 tons (full load).....	2 12.7-mm guns (twin)....	Transferred from U.S.S.R.
mpletion years: 1953 on-	65′00″L, 12′00″B, 3′00″D.	2 18″ torpedo tubes.	about 1953.
vards.	50 knots; 350 n.m. (present max.).	2 total torpedoes.	
Gunboat (PGM)			
tow" class (36 units).....	60 tons (full load).....	4 37-mm guns (twin).....	
mpletion years; 1958 on-	83′00′L, 20′00″B.	2 12.7-mm guns.	
vards.	43 knots (present max.).		
eeper, Fleet (steel-hulled)			
SF)			
t "T–43" class (16 units)...	500 tons (standard).....	4 37-mm guns (twin).....	Capable of sweeping moored,
mpletion years: 1949 on-	569 tons (full load).	4 25-mm guns (twin).	magnetic, and acoustic
vards.	190′03″L, 28′08″B, 7′05″D.	4 12.7-mm guns (twin).	mines.
	14 knots; 2,500 n.m. (present max.).		
	10 knots; 3,200 n.m. (economical).		
Landing Ship (LST)			
LST I class (20 units).....	1,625 tons (standard).....	3 3″ guns.....	Armament varies. Eight ad-
mpletion years: 1943 on-	4,080 tons (full load).	3 37-mm guns.	ditional units are in mer-
vards.	327′09″L, 50′00″B, 13′00″D.	2 20-mm guns.	chant service.
	10 knots (present max.).		
	9 knots; 12,000 n.m. (economical).		
n Landing Ship (LSM)			
LSM I class (13 units).....	520 tons (standard).....	3 37-mm guns.....	11 additional units are in mer-
mpletion years: 1944–45.	900 tons (full load).	6 20-mm guns.	chant service.
	203′06″L, 34′06″B, 8′04″D.		
	12 knots; 4,900 n.m. (economical).		
y Landing Ship (Large)			
SIL)			
"LSIL" (16 units).....	209 tons (standard).....	2 3″ guns.....	5–6 units mount army field-
mpletion years: 1942 on-	387 tons (full load).	4 37-mm guns.	type rocket launchers; 5–6
vards.	14 knots (present max.).		units are fitted for mine-
	10 knots; 5,500 n.m. (economical).		sweeping.
adar Picket Patrol Escort			
GRL)			
single ship (1 unit).....	600 tons (standard).....	2 3.9″/56 guns.....	*Ex*-GRC YUNG SUI; coal
mpletion year: 1929.	225′00″L, 30′00″B, 7′00″D.	4 37-mm guns.	burner; carries Soviet
	16 knots (present max.).		KNIFE REST air search/
	10 knots; 4,000 n.m. (economical).		early warning radar on stern.
Submarine Tender (ASL)			
chih" class (1 unit).....	4,000 tons (estimated).....	4 37-mm (twin).....	Built in Shanghai. This is the
mpleted: 1964.	330′L, 48′B, 18′D. (speed not available).	8 25-mm (twin).	first submarine auxiliary to be noted in China.

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J. Materiel

1. Surface ordnance

The Chinese Communist Navy is weak in surface fire power. All ordnance currently used is either of standard Soviet design or is the original armament found on the ships taken over in 1949. No Chinese-designed naval armament has been identified, but Communist China probably has produced some Soviet models in local factories. Almost all ammunition and minor spare parts are within Chinese Communist production capabilities.

The most modern gun system used by the CCN is the 100-mm (3.9″) mount and its associated WASPHEAD fire control system found on the four "Riga" class destroyer escorts. Several other ships have the 100-mm gun in a dual purpose mount, but all are lacking a suitable fire control system to match the capability of the weapon. The main battery of the four Gordyy class destroyers is the 5.1″ single purpose mount and its associated MINA fire control system, which must be considered second rate by modern standards.

2. Underwater ordnance

a. MINES — Communist China has a wide variety of Soviet mines at its disposal, including moored contact and bottom influence types. The Chinese have long been proficient in the art of improvising; it can be expected that mines, fabricated from any type of buoyant container filled with explosive, will be encountered in rivers and coastal waterways in time of war. Electrically fired, shore-controlled mines are probably included in the CCN stockpile of underwater weapons; moored antisweep obstructors may also be expected. CCN mining capability includes submarine-laid and aircraft-laid mines of the bottom influence types which are probably fitted with magnetic, acoustic, or pressure firing mechanisms, or any combination thereof.

b. MINE COUNTERMEASURES — Soviet mine-sweeping equipment, including gear to counter moored mines as well as bottom influence mines containing magnetic and acoustic firing mechanisms, is available to Communist China; however, the CCN is not believed to have equipment for sweeping pressure-actuated mines.

c. ANTISUBMARINE WEAPONS — The most modern antisubmarine weapons available to Communist China are the Soviet versions of the HEDGEHOG and MOUSETRAP types of ahead-thrown weapons. These weapons are installed aboard "Riga" class destroyer escorts and "Kronshtadt" class submarine chasers and have maximum ranges of 500 and 450 yards, respectively. Soviet depth charges, hydrostatically operated, are also carried aboard CCN ships and are launched from racks, projectors, and mortar-type side launchers. The "Riga" class destroyer escorts are also armed with mortar-type side launchers which are capable of projecting a depth charge outboard of the ship to ranges of 45, 90, and 130 yards. Standard depth charges are capable of firing at preset depths to 328 feet, and may have been improved by increasing the maximum depth to 690 feet. By U.S. standards these weapons give the CCN a World War II capability.

d. TORPEDOES — Initially, the Soviets provided Communist China with a sufficient supply of torpedoes to meet both training and operational requirements. These torpedoes probably were conventional Soviet air-steam driven types, 18 and 21 inches in diameter, and capable of being launched from surface ships, submarines, and aircraft. There is a probability that one or more torpedo factories exist in Communist China.

Shore-battery torpedo installations may have been placed in strategic locations along the Formosa Strait. These installations could augment defenses against amphibious assault forces to a considerable extent. It is possible that the Soviets have supplied the CCN with an electrically driven, passive-homing type torpedo, having a combination electro-magnetic-contact exploder and capable of attaining a maximum range of 5,000 yards at 25 knots. This torpedo is designed for use from "W" class submarines and carries the Soviet designation "ET-80." By U.S. standards, the torpedoes probably in use by the CCN equate to an immediate post-World War II capability.

3. Naval guided missiles

There is a limited amount of evidence which indicates that a unit similar to the Soviet "Komar" and "Osa" class guided missile patrol boat may exist in the CCN. Numbers of craft or missiles supplied are unknown.

4. Electronics

Most electronic equipment aboard Chinese Communist Navy ships is of post-World War II Soviet origin, although there are some older ships which still employ U.S. equipment of the World War II era, primarily the SO surface search radar. Considerable progress in replacing captured Nationalist shipborne electronics with then first-line Soviet equipment was made prior to the withdrawal of Soviet aid in 1960. Thus the Soviet "Riga" class DE, "W" class SS, and many of the captured U.S., British, and Japanese units are largely equipped with Soviet equipment of the 1955-60 period, equipment which is growing obsolescent in the Soviet fleet today. The communications gear operates across the frequency spectrum from VLF through VHF, and MF direction finders are used as navigational aids. IFF equipment is composed of the Soviet SKI POLE and YARD RAKE systems.

To date there is no evidence of series production of Soviet designed shipborne equipment, nor of design, production, or installation of native-designed electronics.

The Chinese Communist Navy has a requirement for modern sonars with which to equip its surface ships and submarine force; however, only obsolescent equipment of foreign design is believed to be installed. There is no evidence that the new types of Soviet military sonars have been obtained. Commercial sonars, such as fish

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MA Chung-ch'üang (7456/1813/0356)	Deputy Commander, NSF
MA Kuan-san (7456/0385/0005)	Attached to Naval Headquarters
MA Lung (7456/7893)	Deputy Commander, ESF
MEI Chia-sheng (2734/0823/3932)	Attached to ESF
P'ENG Lin (1756/2651)	Attached to NSF
P'ENG Te-ch'ing (1756/1795/3237)	Deputy Commander, ESF
SHIH Wen-chou (phonetic)	Deputy Commander, Naval Air Force
SU Chen-hua (5685/2182/5478)	Political Commissar of the Navy
SU Ch'i-sheng (5685/0796/0524)	Deputy Director, Political Department, Naval Headquarters
SUNG Ching-hua (1345/0513/5478)	Attached to NSF
T'AO Yung (7118/0516)	Commander, ESF
TENG Chao-hsiang (6772/0340/4382)	Deputy Chief Naval Staff, NSF
TENG Hsiang-lung (6772/5046/7893)	*Do.*
TS'ENG Ch'üan-sheng (2582/3132/3932)	Deputy Chief of Naval Staff, SSF
TS'ENG K'o-lin (2582/0344/2651)	Deputy Commander, Naval Air Force
TS'ENG Sheng (2582/3932)	Deputy Commander, SSF
TSO Ai (1563/1947)	Attached to ESF
TU I-te (2629/5030/1795)	Attached to Naval Headquarters
TU Piao (2629/1753)	Attached to ESF
TUAN Te-chang (3008/1795/1757)	Director, Political Department Naval Headquarters
TUN Hsing-yun (7319/2502/1789)	Deputy Commander for Naval Air and Commander Naval Air Force
WANG Cheng-chu (3769/2398/2691)	Deputy Commander, NSF
WANG Ch'ing-chuan (3769/3237/1556)	Deputy Chief of Staff, ESF
WANG Ch'uan-chen (3769/0356/3791)	Attached to SSF
WANG Hsiao-ming (3769/2400/2494)	Attached to NSF
WANG Hung-k'un (3769/1347/0981)	First Deputy Commander of the Navy
WANG Tso-yao (3769/0155/1031)	Naval Air Defense, SSF
WEI Shao-kun (7279/4801/0981)	Attached to SSF
WEI T'ien-lu (7614/1131/4389)	Attached to ESF
WU Jui-lin (0702/3834/2651)	Commander, NSF
YIN Te-chang (3009/1795/1757)	Deputy Political Commissar of the Navy
YUAN Tzu-lieh (5913/1311/3525)	Deputy Commander, ESF
YUEH Pei-yuan (6390/0554/0626)	Attached to NSF

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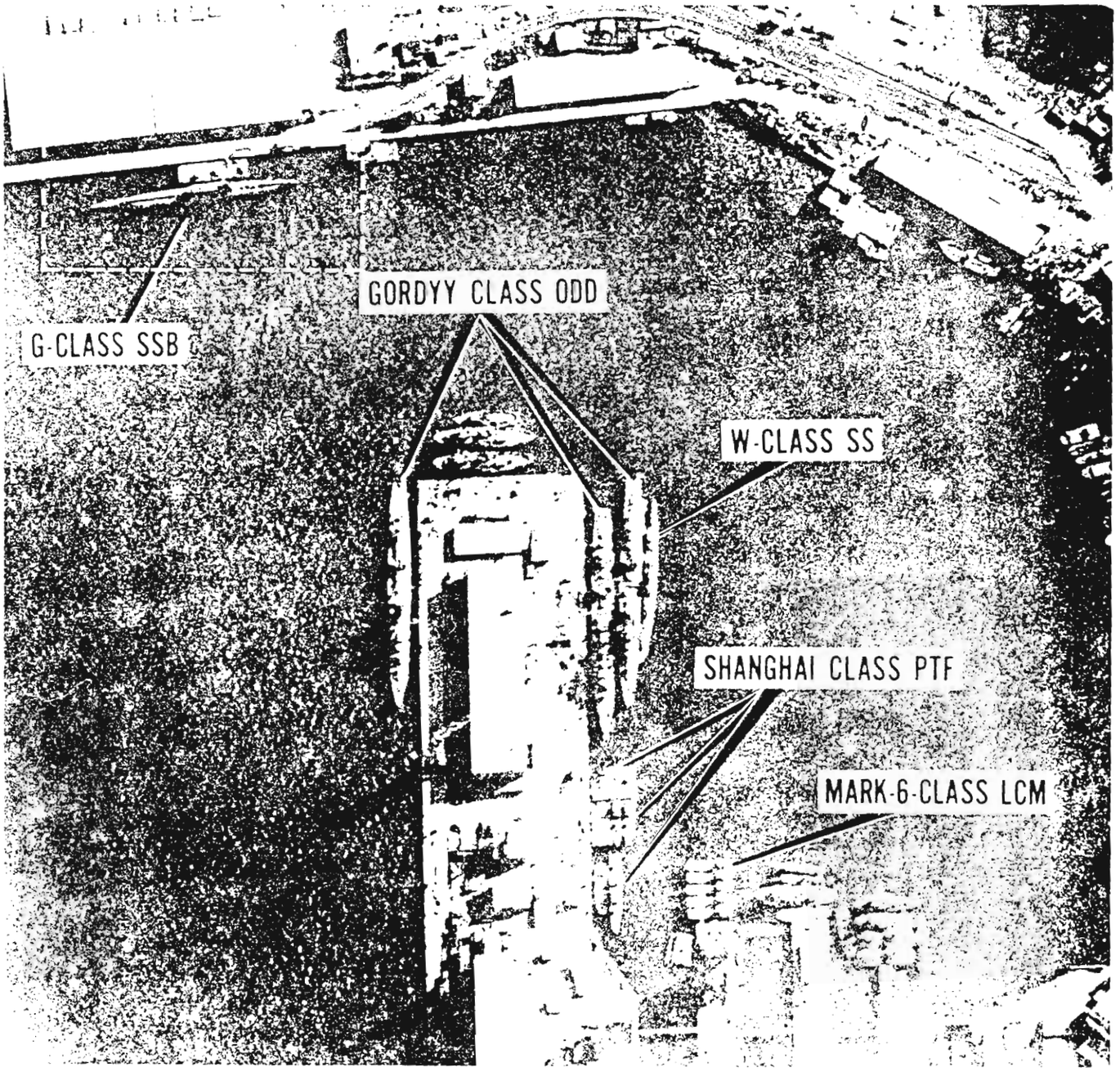
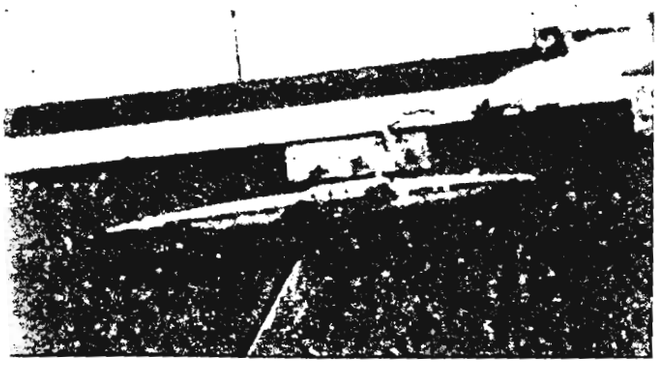


LÜ-TA SHIPYARD SHOWING THE NEW CHINESE COMMUNIST-BUILT "G" CLASS BALLISTIC MISSILE SUBMARINE AT UPPER LEFT



"G" class SSB

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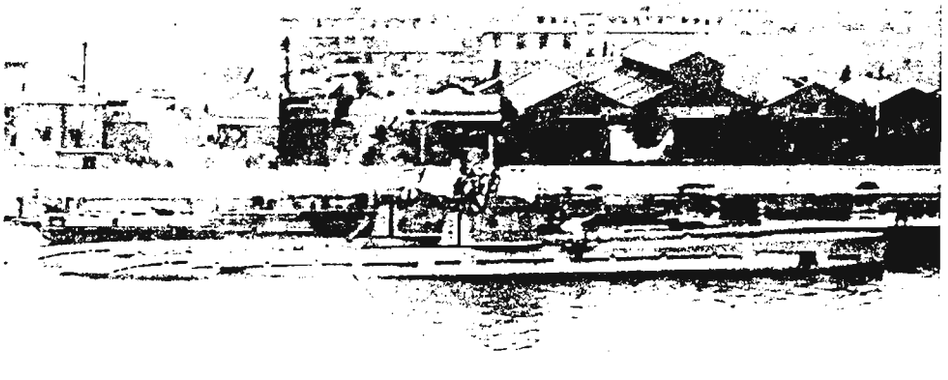
A. Chinese Communist-built "Ta-chih" class small submarine tender

HINESE COMMUNIST-ASSEMBLED "W" CLASS SUBMARINE



HINESE COMMUNIST "M-V" COASTAL RINE. These are two of the four transferred from the Soviet Navy in 1954-55.

D. "Gordyy" class destroyer, one of four ships of this class given to the Chinese Communists by the U.S.S.R. in 1954-55

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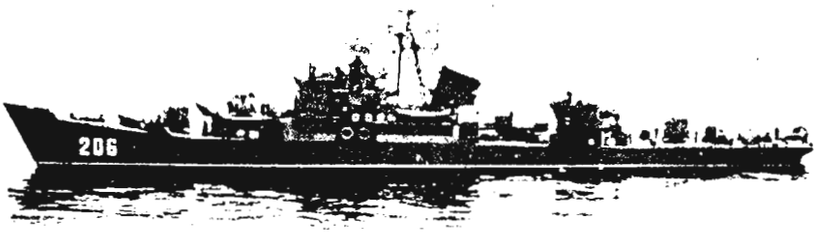
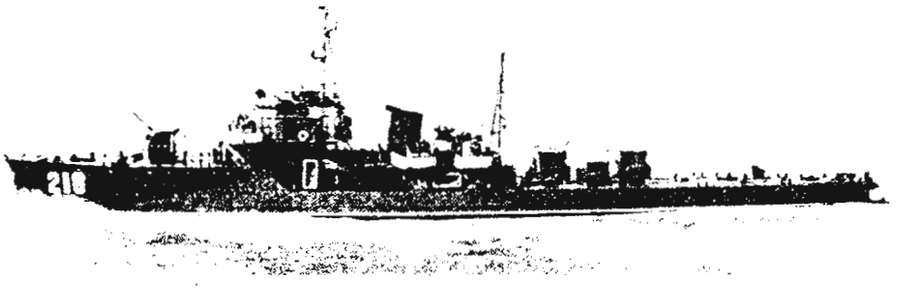
A. Chinese Communist "Riga" class destroyer escort

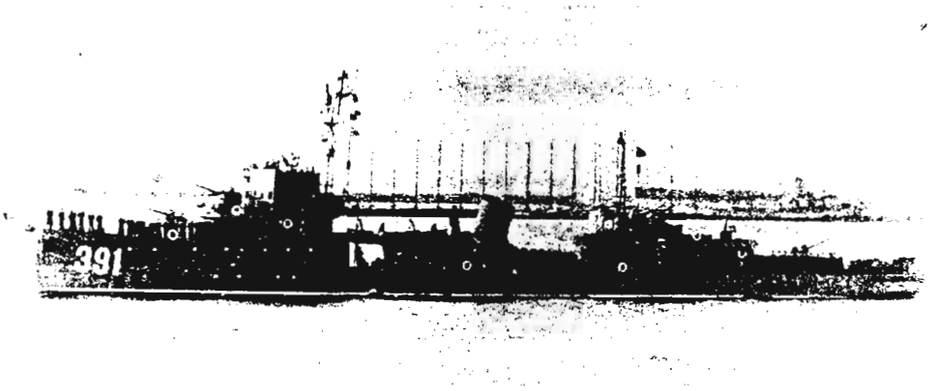


B. Chinese Communist ex-Japanese "Kaibokan II" class patrol escort



C. Chinese Communist ex-Japanese "Ukuru" class patrol escort

D. Chinese Communist ex-Japanese "Etorofu" class patrol escort



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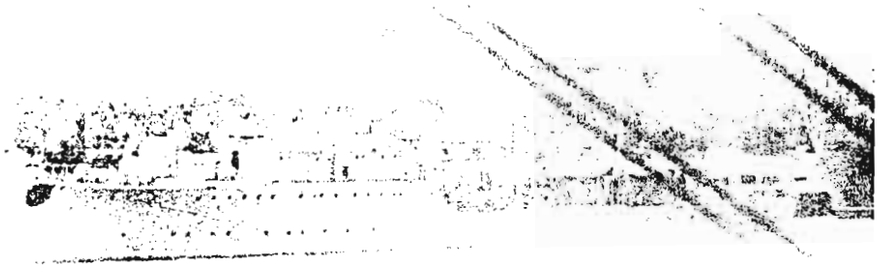
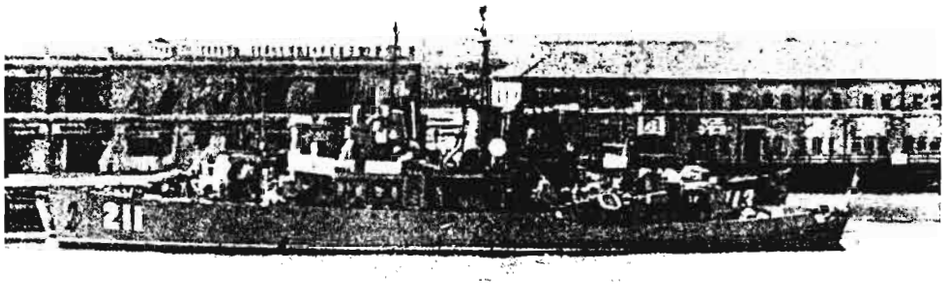
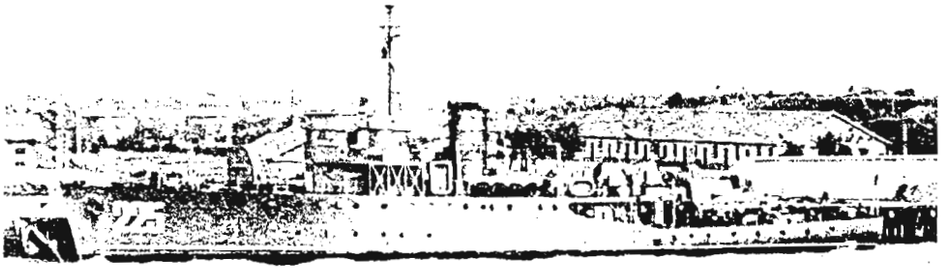


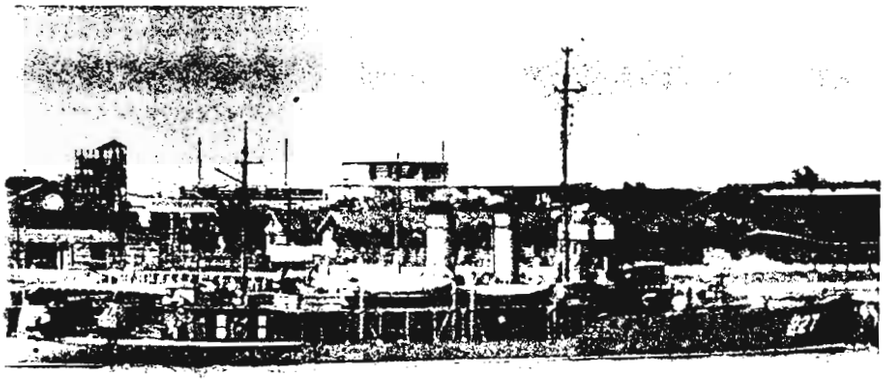
A. Chinese Communist ex-Japanese "Hashidate" class old patrol escort

hinese Communist ex-British ower" class old patrol escort



hinese Communist ex-British urst" class old patrol escort





D. Chinese Communist ex-GRC "Ch'ang Chiang," an old patrol escort

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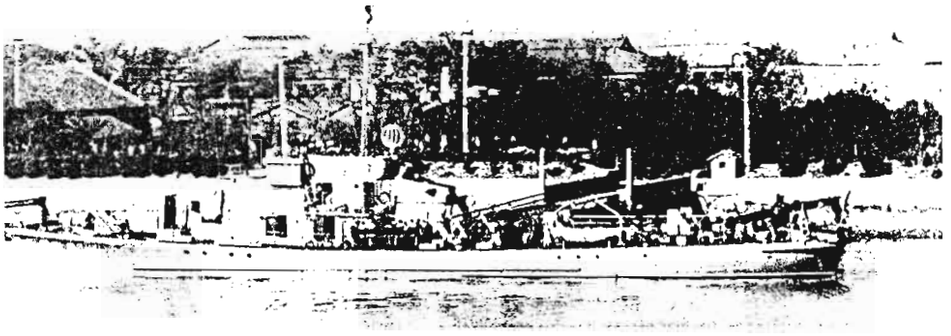
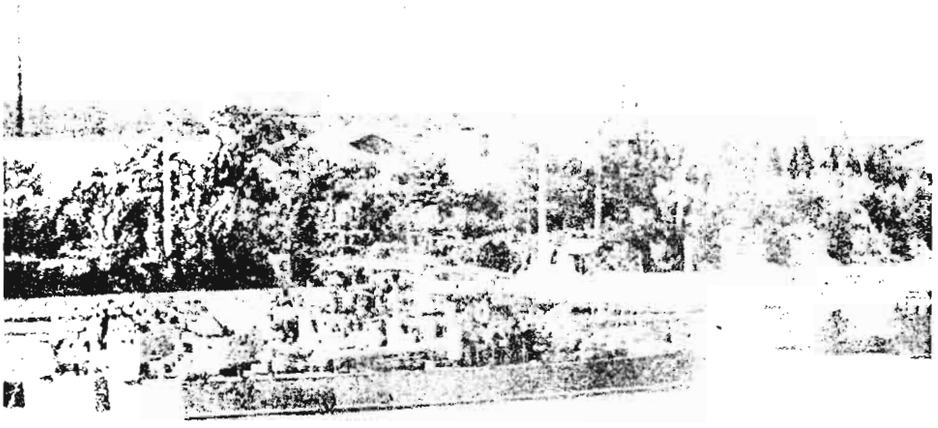
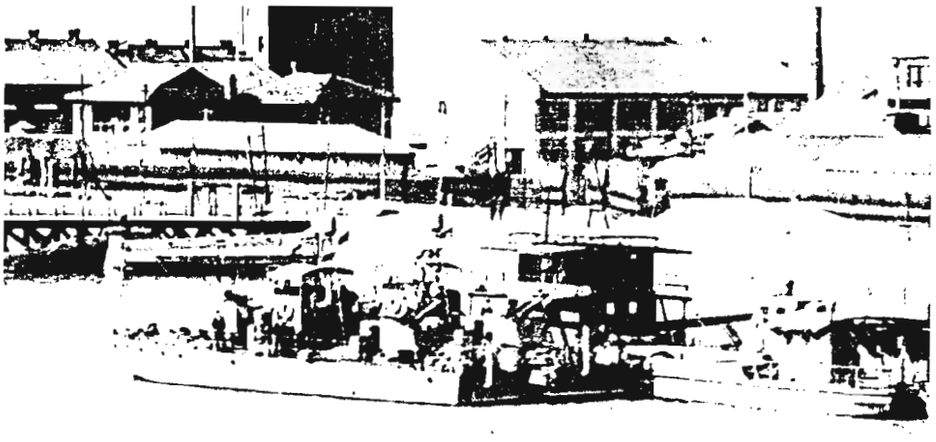


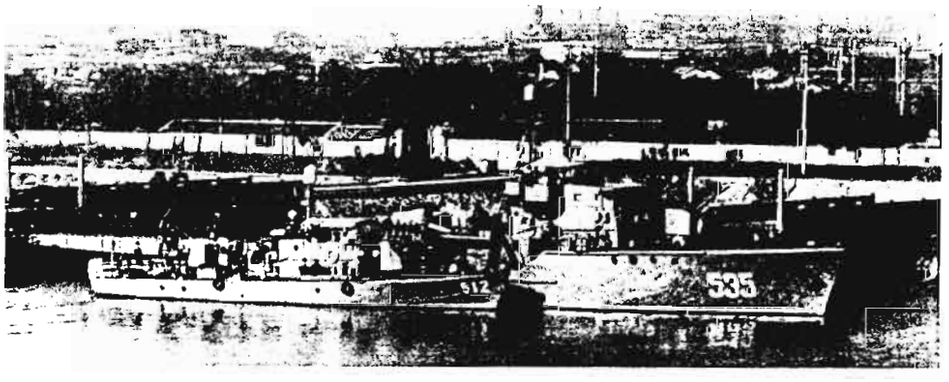
A. "KRONSHTADT" CLASS SUBMARINE CHASER BUILT IN COMMUNIST CHINA



B. "SHANGHAI" CLASS FAST PATROL BOAT, A UNIT OF CHINESE COMMUNIST DESIGN



C. "SWATOW" CLASS MOTOR GUNBOAT, A UNIT OF CHINESE COMMUNIST DESIGN



D. PENDANT NUMBER 512 IS A "WHAMPOA" CLASS MOTOR GUNBOAT. Pendant number 535 is a "Woosung" class small minesweeper. Both ship types are of Chinese Communist design.

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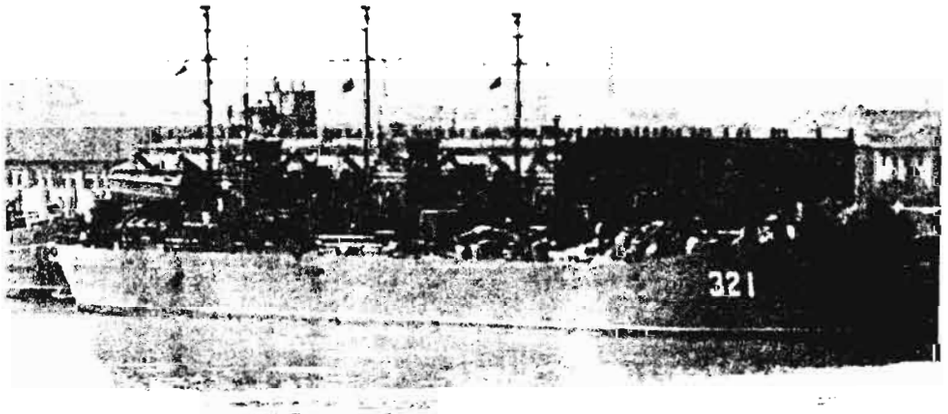
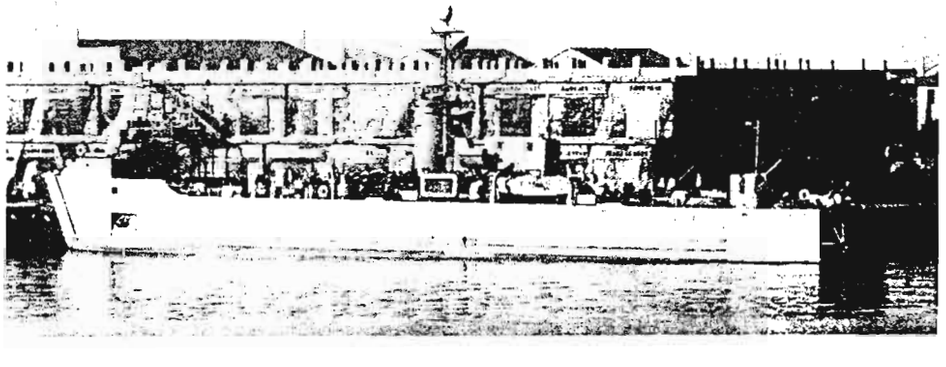
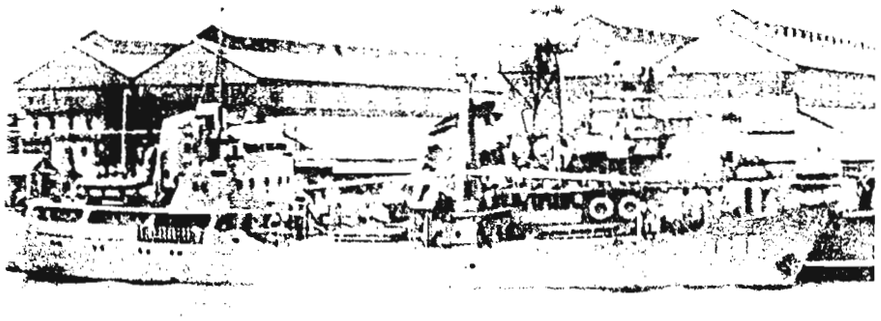
A. "T-43" CLASS MINESWEEPER. This unit was built in Chinese Communist shipyard.

INESE COMMUNIST EX-U.S. "LST-1" CLASS LANDING SHIP, TANK



INESE COMMUNIST EX-U.S. "LSM-1" CLASS MEDIUM LANDING SHIP





D. "TAN-LIN," AN EX-GRC LIGHT CARGO SHIP CONVERTED FROM A MERCHANT VESSEL